Trilingual Language Acquisition: Contextual Factors Affecting Active Trilingualism

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Trilingual Language Acquisition

Contextual Factors Influencing Active Trilingualism in Early Childhood

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Introduction

A correlate of greater personal mobility is the existence of increasing numbers of families in which children are exposed to three or more languages. People are, to a greater extent than in the past, prepared (or expected) to move to a new language area or country for their work. Today, moreover, relocation for work-related reasons is something which both men and women undertake. A situation in which, for example, a Dutch woman and an Indian man meet and form a relationship while working for a company based in London is no longer an unusual thing. Such couples are faced with many issues which monolingual couples are not, a prominent one being that of language choice. Directly or indirectly, couples must negotiate which language(s) they speak to each other. For those couples who then have children, this question becomes even more pertinent. At the latest when the first child is born, such couples commonly ask themselves: Which language(s) should we speak to our child, and which language(s) should we now speak to each other?

Today, the idea of bringing up children trilingually is seen as a feasible option by many such couples. Earlier beliefs about the dangers of *bi*lingualism (see e.g. Grosjean 1982: 274),[1] commonly propagated by educators and doctors, have been discarded by enlightened authorities and parents, and over the last few decades, raising children bilingually has been viewed in an increasingly positive light.[2] This positive outlook has carried over to professionals in the field of multilingualism, and to (potentially) multilingual families themselves. Although some parents do voice concerns that "three languages might be too much", many others hope, or even simply expect, that their children will speak all the languages that they are exposed to. A number of parents believe that if they follow the frequently recommended strategy of *one person, one language* (1P/1L), in which each parent consistently speaks their[3] own language to the child, the child will acquire both parents' languages, in

[1] Grosjean quotes Haugen (1972: 307) who mentions – and dismisses – the following apparent dangers: "retardation, intellectual impoverishment, schizophrenia, anomie, and alienation".
[2] Although see Cruz-Ferreira (2006: 226–228) and De Houwer (2009: 90–92, 315–317) for evidence of persisting negative attitudes.
[3] For the sake of simplicity, singular *they* is used throughout the text.

addition to a different community language,[4] with relative ease. However, parents often then discover that while the strategy seems straightforward enough, reality is far more complex. They find that the rule is not always easy to maintain and, moreover, even when it is maintained, not all children raised in this way come to speak their parents' languages. The fact is that children in multilingual families display very different levels of multilingualism – to the joy, amazement, or disappointment of their parents.[5]

I would like to illustrate this briefly with two examples. In 2006, I conducted interviews with 33 families in Switzerland and one in southern Germany, in which the children were exposed to three or more languages (or, in one case, could have been but the parents opted for just two languages). In what follows, I give a sketch of the language development of the children in two of these families. Both families live in German-speaking Switzerland, thus the language of the environment is Swiss German. The children in both families attend local schools. Both sets of parents follow the strategy of one person, one language. In family A, the mother speaks English to the children and the father Danish; the parents speak English to each other. In family B, the mother speaks Swedish to the children, the father English, and the parents also speak English to each other. Each family has four children. All but the eldest child in family B were born in Switzerland, the family moving from Sweden to Switzerland two years after his birth. At the time of the interview, the children in family A were aged between seven and three. In family B, the oldest was in high school and the youngest in kindergarten. The language exposure patterns in the two families are set out in table 1.1, below.

[4] This is a common pattern of exposure to three languages in mainly monolingual societies (Chevalier 2008: 37–39, Hoffmann 2001: 7, Quay 2001: 154–155). Note, however, that in De Houwer's large-scale survey in Flanders (2004: 416) and Braun and Cline's smaller scale one in England and Germany (2010: 116–117) it was not the most common one.

[5] The information about parents' views and experiences in this paragraph is based on the interviews described in the following paragraph.

Table 1.1: Language exposure patterns in two trilingual families

Source of exposure	Family A	Family B
Mother → Children	English	Swedish
Father → Children	Danish	English
Mother ←→ Father	English	English
Community	Swiss German	Swiss German

Concerning the pattern of language presentation in the two families, the situation can be considered identical. Yet the children's language choices are very different. In family A, although the parents address their children in English and Danish, the children speak to their parents almost exclusively in Swiss German. This type of interaction is what De Houwer has called "dilingual", that is, "[c]onversations in which one partner consistently speaks a different language from the other one" (2009: 361, see also p. 138). In the interview, with all family members present, I noticed only one exception to this pattern, namely when one of the children said something briefly in Danish. The father mentioned that he was not actually sure how much Danish the children really understood, and in retrospect wondered if he shouldn't have spoken English to them instead. The parents expressed disappointment at their children's lack of active trilingualism (or even active bilingualism). In family B, on the other hand, the children speak fluent English, Swedish and Swiss German. The patterns of language use between the parents and children in the two families are illustrated in table 1.2, below.

Table 1.2: Language use between parents and children in two trilingual families

Language use	Family A	Family B
Mother → Children	English	Swedish
Children → Mother	Swiss German	Swedish
Father → Children	Danish	English
Children → Father	Swiss German	English

So why do some children exposed to three languages come to speak them while others do not? Clearly, it involves more than parents simply speaking their own native languages. Further details concerning how the children were exposed to their three languages in these two families shed light on the

differences in their language production. In family A, both parents work full-time. The children are looked after by a Swiss German-speaking nanny. Both parents understand Swiss German, and the mother is in fact also a native speaker of it, being bilingual herself. In family B, the Swedish mother has been at home full-time ever since the birth of the first child. The children did not go to day care, although they did sometimes play with local children in their pre-school years. The mother can speak Standard German and said that she also speaks Swiss German with transference from Standard German. The American father works full-time and does not speak or understand much (Swiss) German. He stated that he has a limited knowledge of Swedish. In neither family did the parents insist that the children answer them in the parental languages. The different levels of trilingualism in these two families can for the greater part, therefore, be explained by the very different quantities of exposure to the three languages, as well as the parents' proficiency or lack thereof in the community language. However, these two cases represent extremes, both regarding differences in levels of active trilingualism, and in differences in the family situations. In many families I interviewed, the picture is far less clear. For example, there were other families in which both parents also worked outside the home, yet their children spoke their parents' languages with them (at least to a certain extent), rather than the community language – despite the fact that the parents mastered the community language.

It is plain that the question of why some children exposed to three languages come to speak them while others do not involves a complex answer. It is the aim of the present study to attempt such an answer. The study sets out to examine the language acquisition of young children exposed to three languages from infancy, focusing on the factors in the children's environment (*contextual factors*) which influence the extent to which they speak the three languages (or their levels of *active trilingualism*).

The theoretical assumptions which inform the research come predominantly from the fields of sociolinguistics and pragmatics, both of which are "centrally concerned with the effect of context on language" (Thomas 1995: 187). As is known, sociolinguistics attempts to explain language variation – including

code choice – according to social variables such as interlocutor, topic or setting. A concrete example of a sociolinguistically informed approach to bi- or multilingual language acquisition is an examination of the proportions of each language a bilingual child uses according to interlocutor. For example, Genesee et al. (1995 reported in Genesee 2003) conducted a study of two-year-olds raised bilingually in Montreal. The children, aged between 22 and 26 months "used substantially more French than English with their French-speaking parent and substantially more English than French with their English-speaking parent" (Genesee 2003: 214). These findings are reinforced by a second study by Genesee et al. (1996 reported in Genesee 2003: 216). In this study, a different set of bilingual two-year-olds were observed in conversation with monolingual strangers, with similar results.

A pragmatic approach, on the other hand, focuses on inherently dynamic aspects of language use, analysing meaning created in interaction. An example of this kind of approach can be seen in the examination of whether a child recognises a parent's insistence that the child speak a particular language for what it is. For instance, a parent speaking Language A may attempt to get their child to also speak Language A by pretending not to understand what the child has said in Language B. The child, however, may not realise that language choice is the issue and may simply repeat the utterance – perhaps more clearly – once again in Language B. The meaning intended by the speaker is thus at odds with the interpretation of the child, and, depending on how the adult next responds, may remain so.

Note that in delineating these two approaches in this way I do not wish to create the impression that I necessarily consider the fields of sociolinguistics and pragmatics to be discrete entities. The approach I have called a pragmatic one could also be called "interactional sociolinguistics" (Gumperz 1982), whose "primary goal" according to Tannen (2005: 205), is "to understand how language works to create meaning in interaction". Richard J. Watts (pc) states unequivocally that the boundary between sociolinguistics and pragmatics is a fuzzy one, while Taavitsainen and Jucker (2010: 5) elaborate that if one follows the sociologically-based Continental European conception of pragmatics "there is considerable overlap" between the two fields. In

following the two perspectives described above, I have simply tried to distinguish, following Thomas (2005: 185–187), between contextual variables which have a certain stability (e.g. the native language of the adult interlocutor) and elements of the context which are dynamic (e.g. how a caregiver makes use of their linguistic repertoire in conversation with the child).

The specific tools of my analysis come from models already known to us from research on bilingual acquisition, and these are described in the following chapter. A selection of key studies which focus on the role of contextual factors in early bilingual development are discussed. In particular, Döpke's study (1992) of six young children growing up with English and German in Australia, and Lanza's study (2004 [1997]) of two infants exposed to Norwegian and English in Norway are examined in detail.

Yet bilingual language acquisition is not trilingual language acquisition. As Hoffmann (2001: 12) points out, while a child growing up with two languages has the choice of speaking Language A, Language B or Languages A+B combined, a child growing up with three languages has a choice of speaking A, B, C, A+B, A+C, B+C or A+B+C. In other words, while a bilingual has three language options, a trilingual has seven. Clearly, the sociolinguistic situation is more complex. Further, the amount of input per language is likely to be less than in the case of bilingual language acquisition. In chapter three, I examine all the studies in early trilingualism which shed some light on correlations between a child's trilingual environment and their trilingual language development. Since comparatively little research has been conducted in this field, most trilingual language acquisition research published at the time of writing is in fact reviewed in this chapter.

The remainder of the study is devoted to the analysis of the trilingual development of two young children, in two different families, growing up with three languages in Switzerland (Swiss German, French and English). Speech data were gathered monthly from just after the children's second birthdays until just after their third, as well as once again at ages three and a half and four. The data collection, transcription and coding is described in

chapter four. Chapter five gives an account of the children's production of their three languages. Chapter six examines the more stable contextual factors in the children's environment, such as the overall language presentation patterns, and the relative quantity of input, while chapter seven focuses on the dynamic contextual aspects, with a close analysis of the child–caregiver interactions. Together, chapters five, six, and seven describe and seek to account for the two children's trilingual language acquisition.

At this point, I would like to clarify what exactly is meant by the term *trilingual language acquisition*. Although linguists make use of the term (e.g. Hoffmann 2001, Montanari 2005) they do not usually define it. De Houwer (2009: 368) does offer a cautious definition of the term *trilingual acquisition* explaining it as "[t]he learning of three languages in early childhood". In the present study, I follow De Houwer's idea, defining it more precisely. In this study, *trilingual language acquisition* refers to the language development of young children who have been exposed to three languages regularly, in a non-formal setting, before the beginning of formal schooling. By *regular exposure*, I mean "daily or almost daily contact with a language through interpersonal interaction or overhearing a language" (De Houwer 2009: 4, defining "regular input"). By a *non-formal setting*, I refer to contexts such as the home, day care or preschool. By *formal schooling* I mean the beginning of (obligatory) kindergarten or school.

Some researchers delineate an age which separates early trilingual language acquisition from later trilingual language acquisition. Both Hoffmann (1985: 480) and Barnes (2006: 9) follow the bilingualism scholar MacLaughlin (1978) in using the age of three as a marking point. Hoffmann uses the term *infant trilingual* to describe children exposed to three languages under the age of three and *child trilingual* to describe those over the age of three. Barnes uses the term *early trilingualism* for the language development of the former. Both Hoffmann – and MacLaughlin before her – readily admit, however, that age three is an arbitrary marker. To my knowledge, Quay (2001: 153) is the only linguist who has attempted both a precise *and* theoretically grounded definition, using the term *early trilingual development* to refer to "the case of children exposed to three languages regularly before their first words". Quay

provides evidence, based on the speech data of an English–German–Japanese trilingual child, that before or near the onset of speech is a meaningful, non-arbitrary defining point. The child in her study was exposed to English and German until eleven months, and Japanese when starting day care at this age. She reports that there was no delay in his production of Japanese, and that this was the language he used most often with his English- and German-speaking parents right from the beginning of the study (at eleven months). Quay claims that regular exposure to another language before or near the onset of speech can, therefore, be considered a case of *first language acquisition* – in her study thus *trilingual first language acquisition* (2001: 180). De Houwer, by contrast, reserves the term *bilingual first language acquisition* for children who have been regularly exposed to two languages from birth (2009: 2–6) or (in earlier publications) very soon after, such as one week (1990: 3) or one month (1995: 223).

If one follows Quay's suggested definition, the language acquisition of the two children in the case studies I present in this study would be categorised as *trilingual first language acquisition*, since one child was exposed to three languages from birth, and the other was exposed to two languages from birth and the third from the age of seven months. Note, however, that since the question of active trilingualism in early childhood, which is the focus of this study, does not rest upon the question of whether or not children are exposed to all three languages by the age of onset of speech, I usually make use of the more general term *trilingual language acquisition*.

With regard to further terms and definitions, the following approach has been adopted. In the discussion of the various studies in chapters two and three, terms are used as the authors themselves use them. The authors' own definitions are given when necessary. When it comes to the present study, definitions of terms are given in the relevant sections. For example, in chapter four, which deals with transcription and coding, my definitions of *utterance* and *turn* are explained, while in chapter five, which looks at the children's language production, *base language*, *mixed utterance*, and so on, are defined.

As a final point in this introduction, I would like to mention the fact that in the entire discussion in this study we are concerned with families in which there is some choice in language use. For example, in the Swedish-American family described above, while the children had no choice but to speak English with their father if they wanted to communicate with him, they could have, in theory, chosen not to speak Swedish with their mother, since she understood both of the other languages involved. In the American-Danish family, the children could (and did) choose not to speak either of their parents' languages since both parents understood the community language. However, situations are also conceivable in which a child has no choice but to speak all three languages, such as that of a child living in a bilingual community, with bilingual schooling, and who has parents who only speak and understand a non-community language. Such situations, however, did not occur in any of the studies reviewed, nor in any of the families interviewed. The children in question here *could* choose not to speak a particular language, and it is precisely this option which makes the promotion of active trilingualism an issue.

2

What We Already Know from Bilingual Language Acquisition Research

2.0 Introduction

The influence of contextual factors on the young bilingual's language development was discussed already in the very first study published on bilingual language acquisition, namely Ronjat's *Le développement du langage observé chez un enfant bilingue* (1913). Ronjat describes the bilingual upbringing and bilingual development of his son Louis. He places much emphasis on the advice given to him by the linguist Grammont, namely: "voici le point important: que chaque langue soit représentée par une personnne différente" (p. 3), that is, that each person who speaks to the child should speak only one language; advice which Ronjat famously characterised as "une personne, une langue" (p. 4), or 'one person, one language'. Ronjat then mentions further environmental factors he considers influential in whether or not a child masters two languages, such as the frequency of input for each language, as well as "l'importance familiale et sociale des personnes" who provide the input (p. 6), that is, whether or not the interlocutors are part of the family, and what their social standing is.

Despite the fact that the role of contextual factors in fostering bilingualism was discussed already a century ago, it did not become a central question in the field until the last few decades. Bilingualism studies *per se* were not very common until the last quarter of the last century, and when the field did begin to burgeon, many studies focussed on the question of whether children exposed to two languages initially began with a single language system comprised of both languages or not, these studies largely inspired by Volterra and Taeschner (1978). This question was given much prominence in the field of child bilingualism for well over a decade. However, the results of a number of studies (e.g. Meisel 1989, Genesee 2003,) as well as critiques of the methodology of proponents of this hypothesis (e.g. De Houwer 1995, Meisel 2004) have led to a fairly consensus view that there is no evidence for the one-system hypothesis, and some linguists even doubt the relevance of the question (e.g. Lanza 2004: 328–9). Today, however, an examination of contextual factors in bilingual language development has been undertaken by

a number of linguists, and it is my aim in this chapter to describe key studies in this area. Two of the studies, Döpke (1992) and Lanza (2004), both longitudinal and monograph-length, will be discussed in detail since I rely on the theoretical frameworks developed by these scholars in my own analyses. Further relevant studies will be characterised more briefly.

2.1 Döpke (1992)

The aim of Döpke's study was to explain why parents following the one person, one language strategy (called in her book, as well as elsewhere, "one parent, one language") have such different measures of success when it comes to raising children bilingually (p. 2). Indeed, she notes in her preface that because so many people had informed her of how difficult it was to establish active bilingualism, she decided not to focus on "how a child becomes bilingual" but rather on "how one can make a child bilingual" (p. xvii). Döpke's approach is an interactional one and she concentrates largely (although not exclusively) on how parents promote (or do not promote) their children's use of the minority language by the way in which they talk to their children.

Six bilingual families in Australia took part in Döpke's study (pp. 27–28). In each family, one parent spoke English to the child and the other German. In five of the six families, the mother was the German speaker, in one of the families it was the father. Three of the mothers were native speakers of German, two were second-generation speakers, while the one father who spoke German had learned it as a foreign language. All of the English-speaking parents were native speakers. In each of the six families, the mother was the primary caregiver. The focus of the study was interactions between each parent and their first-born child. At the outset of the study, four of the children were 2;8,[6] while the other two were 2;4.

The main data of the study are two sets of recordings of the six children (pp. 29–30). The children wore a radio-microphone and were recorded at the same time of day, namely from mid-afternoon until bedtime. The families were expected to carry out their normal routines. The interactions which were

[6] Ages are represented as years;months.days.

transcribed were generally those from just before dinner until bedtime (p. 31). In this way, various activities were covered which involved both parents (play, meals, getting ready for bed, etc.). This recording procedure was repeated once again six months later. The author notes that besides capturing a variety of daily activities (p. 30), a second advantage connected with such long recording sessions is that, being recorded over so many hours, and not knowing which part of the recording would be used, parents may well monitor their speech less (if at all) compared to shorter recording sessions (p. 51).

The children's utterances were classified as either a) German b) English, c) a mixture of both or d) neither (the latter category included names, non-words, and words which could be from either language). An utterance with an element of German plus an element from the category "neither" was classified as German, just as an utterance with an element from English plus one from the category "neither" was categorised as English (p. 35). How the children's actual utterances were defined, however, is not explained (a definition for the parental utterances is given, pp. 147–148).

The classification of the children's utterances at the two different time periods yielded the following results. In the time frame between the first and the second recording, two of the six children (Keith and Fiona) had developed their minority language, German. In the second recording, the proportion of utterances in German to the German-speaking parent was 83.3% for Keith and 68.8% for Fiona. Among the other four children, there was either a decrease in the amount of German used between the first and the second recording (three children) or the rate stayed the same (one child). The amount of German used to the German-speaking parent in the second recording for these four children ranged from 6.1% to 30.9% (p. 36).

Döpke describes the German input in terms of *extent* and *variety of contact* (pp. 57–63). Relating these external variables to the children's language proficiency in the minority language, she concludes that there is "[n]o correlation […] between the extent and variety of contact with German on the one hand and the children's development of active bilingualism on the other hand." She

notes that "the two German-speaking children, Keith and Fiona, could not be distinguished from the other four children in this respect" (p. 79). However, this does not actually appear to be the case for Fiona. Firstly, she was one of the three children who, according to parental estimates, in the course of a day heard more German than English (the other three heard more English than German). Secondly, she was "the only child in the sample whose exposure to German-speaking people was intensive" (p. 58). These contacts included both German-speaking relatives and friends. Döpke notes that another child, Jacob, was in "much the same situation as Fiona" (p. 80), and yet he did not develop active bilingualism. This is one reason for her coming to the conclusion that there was no correlation between the extent and variety of contact with German and the children's development of active bilingualism. Yet unlike Fiona, Jacob did not in fact have contact with his German-speaking relatives. His family had few German-speaking friends, and Jacob's contact with these friends was in any case "minimal" (p. 58). The situation of Jacob with regard to the variety of contacts was therefore actually different to that of Fiona. The description of the family situations and children's proficiency seems to show that there in fact *is* a correlation between "the extent and variety of contact with German" (p. 79) and the development of active bilingualism. Of the six children, Fiona was the one who had the most intensive exposure to German, counting together *extent* and *variety of contact*, and she was one of the two children to develop active bilingualism.

The other German-speaking child, Keith, was exposed to German only from his father, who was not the primary caregiver, nor a native speaker of German. With regard to extent of exposure to German, Keith belongs to the group of children who heard more English than German in the course of a day. Keith did not have any German-speaking relatives, but Döpke notes that "Keith's father compensated for the original disadvantage by arranging contact with other German-speaking people and exposing Keith to a variety of different language media" (p. 79). Thus while Keith clearly had less exposure to German than half of the children in the study, he did have a variety of contacts, even if these contacts were not as intensive as those of Fiona (pp. 58-59). So while it is true that amount of input (*extent of contact*)

cannot explain Keith's production of German, *variety of contact* and *variety of media* may well play a role.

As with the children's utterances, Döpke also coded the parents' child-directed utterances for language. She found that the German-speaking parents were highly consistent in their language choice when addressing their children (p. 176). The lowest score for the percentage of utterances (raw numbers are not given) directed to a child in German was 94.9%; the highest was 100% (p. 61). The figures for each parent are so high that the variable of consistency in speaking German cannot be used to explain the different levels of bilingualism for the children in this study.

Döpke further describes the extent to which parents insisted that the children speak German (pp. 63–70). She describes six insisting strategies, and ranges them on a continuum from low constraint to high constraint:

Low constraint
Incorporated translation
Translation
Translation plus question
Challenging question
Not-understanding
Request for translation
High constraint

According to her scale, the weakest level of insistence is when the minority language-speaking parent partially translates the child's majority language (or mixed) utterance, incorporating the element(s) into their own utterance. She names this "incorporated translation", and gives the following example:[7]

Example 2.1 **Incorporated translation** (p. 64)
Child: *I make mouth for you.*
Mother: *jawohl ist der ist der Mund auf der Stirn?*
'yes is the is the mouth on the forehead?'

[7] I have slightly edited and reformatted Döpke's examples.

Döpke states that this is a very low constraint strategy, since the child is not required to acknowledge the translation (pp. 63–64). The next strategy on the scale is simply called "translation", by which Döpke means a "non-incorporated translation". This is also low constraint, but less so than an incorporated translation in the sense that it is marked. Below is an example:

Example 2.2 **Translation** (p. 63)
Child: *the cat!*
Father: *das ist eine Katze,*
'that is a cat,'

In Example 2.1, the conversation continues smoothly, while in Example 2.2, the father is clearly repairing the child's utterance. In neither instance, however, is a response required from the child.

In the middle of the continuum we find "translation plus question":

Example 2.3 **Translation plus question** (p. 64)
Child: *this hurts me a bit.*
Mother: *tut ein bisschen weh?*
'does it hurt a bit?'
Child: *yeah hurts.*

This is more constraining, since the parent's utterance is the first part of a question-answer adjacency pair, requiring a response from the child. However, the response required is only a polar one, that is, a yes/no reply. The other strategy requiring a polar response (called "challenging question") seems rare; it only occurred in one dyad and will therefore not be described here.

At the high constraint end of the continuum we find the parent requiring a content response from the child. A high constraint strategy involves pretending not to understand the child, in order to elicit the same content in the other language. Note that Döpke separates this from "genuine not-understanding", and only counts the former, which is meant to elicit a

translation. Since the forms of the two responses are "virtually indistinguishable" (p. 65), the difference was judged by how the conversation continued. An example of "not-understanding" is given below.

Example 2.4 **Not-understanding** (p. 65)

Child:	*nein go away.*
Father:	*das versteh ich nicht.*
	'I don't understand that.'
Child:	*go away!*
Father:	*verSTEH ich nicht.*
	'don't underSTAND that.'
Child:	*GEH WEG!*
	'GO AWAY!'
Father:	((laughs)) *okay. das versteh ich.*
	'that I understand.'

Finally, the insisting strategy with the highest level of constraint is, according to Döpke, a request for translation. This is the most explicit strategy.

Example 2.5 **Request for translation** (p. 66)

Child:	*make the bees honey?*
Father:	*du sollst auf Deutsch sagen.*
	'you are supposed to say in German.'
Child:	*Honig.*
	'honey.'

Insisting strategies in response to the child's use of the (from the adult's perspective) inappropriate language were not common among any of the German-speaking parents. However, Keith and Fiona were faced with high-constraint insisting strategies (not-understanding and request for translation) more often than the other children. The other parents used such strategies only very rarely or not at all (pp. 70, 176). Döpke notes that high-constraint insisting strategies "create a need to speak the minority language which does not automatically exist" (pp. 191–192). She also states that the "relative artificiality of this method is of secondary importance" (p. 192). Children, like

any other interlocutors, want to get their message across, and will try to avoid situations in which communication is held up by repair sequences.

Besides examining insisting strategies, Döpke explores the extent to which parents promote conversation with their children (ch. 4). She analyses the interactions in terms of whether the parents' contributions focus on communicating with their children, for example by supporting a topic introduced by the child (p. 99), or controlling the children, for example by the use of directives. The first type of contribution she describes as "child centred", the second as "control-oriented" (p. 84). The analysis details a range of discourse moves. However, a comparison of the minority-speaking parents did not lead to any conclusive results. A comparison of the parents within each family, though, did bring an interesting fact to light, namely that in no family were the discursive styles of the mother more child-centred than those of the father. In four of the six families (including Keith's) it was the father who was rated as interacting in a more child-centred manner than the mother, while in the other two families (including Fiona's), the rating was similar (p. 140). She explains this difference by noting that when mothers spend time with their children they are often involved in child-care activities (feeding, bathing, etc.), as well as housework. They therefore probably do not engage in intensive play with them very often. Fathers, on the other hand, who tend to engage in fewer caring activities and less housework, can devote their attention exclusively to the child-centred activity at hand (p. 193).[8] This analysis seems highly plausible for families in which the mother is the primary caregiver. Cruz-Ferreira (2006: 62) also notes this behavioural aspect in her study: after being looked after all day by their Portuguese mother, "[o]ne of the highlights of the children's day was their [Swedish] father's homecoming in the evening, which usually meant lengthy sessions of rough play and giggles". Moreover, it is interesting to note that Wang (2008: 62) comes to a similar finding in a case study in which both parents worked part-time and were both often at home. She notes that when the father was looking after the children, he often played intensively with his two sons. The mother, on the other hand, once the children had passed babyhood, was involved in rather more "peripheral interaction". She was often "engaged in something

[8] See also Lanza (2004: 251) for a discussion of this particular finding of Döpke.

else and would give them only partial attention". Döpke also notes, however, that the personality of the parent appeared be important (p. 191).

The final analysis of the data is concerned with the extent to which parents teach their children language (chapter 5). Döpke categorised all the parents' utterances either as teaching-oriented ("teaching techniques") or non-teaching oriented. Teaching techniques were grouped into the teaching of vocabulary, grammar and "techniques with unspecified goals" (p. 153). An example of vocabulary teaching is the use of "choice questions" or "or-questions" e.g. *Do you want the pink one or the black one?* (my example). Such questions provide two labels for the child to choose from (p. 150). An example of grammar teaching is the technique of expansion, whereby a parent expands on a child's utterance, e.g. when a child says: *flower*, and the parent responds: *oh you've drawn a flower!* (my example). Note that while the first example is an elicitation technique and the second a modelling technique, both elicitation and modelling can be used in either vocabulary or grammar teaching. An example of a teaching technique with an unspecified goal is a parent giving positive feedback on a child's utterance. With regard to the results, Döpke found that both Keith and Fiona's German-speaking parents used more teaching techniques than the other German-speaking parents. In addition, they also used more than their English-speaking spouses. In the other four families, on the other hand, it was the English-speaking parents who tended to be more teaching oriented. However, Döpke also notes that while the differences in three families (including Keith's) were substantial, in the other families (including Fiona's), they were not. In the second group, therefore, it is unlikely that teaching techniques were a variable which made a difference in the children's levels of active bilingualism (p. 171).

In addition to the factors Döpke analyses in depth, she also mentions various other factors as influential in promoting active bilingualism, such as the absence of negative attitudes towards bilingualism, support for the minority language in the community and trips to the country of origin (pp. 55–57). These variables are not described in detail in her study since for each of the six families the variables were the same: the families had and generally experienced positive attitudes towards bilingualism (p. 80), none enjoyed any

particular support of the minority language (p. 54), and none took trips to the homeland during the period investigated. It should be pointed out that even though parents may be positive about bilingualism in general, this may not necessarily translate into confidence in transmitting the minority language. This can be seen particularly in the behaviour of one mother who spoke German to her daughter very quietly when monolingual children were present, so that her daughter would not be embarrassed. Döpke notes that "statements against German" on the part of this child, and "self-corrections towards English when speaking to her [German-speaking] mother indicated that she was consciously refusing to speak German" (p. 187).

Döpke concludes that her results reveal the following (p. 193):

> [T]he quality of input is more important in the acquisition of a minority language than the quantity of input when children are raised according to the principle of 'one parent–one language'.

It should be recalled, however, that in the case of one of the two German-speaking children (Fiona), the child did receive more input in the minority than the majority language. Thus, quantity of input appears to be one of the factors that played a role in her acquisition of the minority language, along with a variety of contacts and the use of high constraint insisting strategies. However, where the other five children are concerned the quantity of input and minority language proficiency indeed do not seem to correlate. Keith, the other German-speaking child, heard more English than German. In his case, a combination of a variety of contacts and media, and the use of high constraint strategies and teaching techniques appear to have paved the way for his production of German. Thus, the results of this study show how a combination of external factors influences active bilingualism.

2.2 Lanza (2004)

Lanza's monograph, first published in 1997, focuses on language mixing in the speech of two infants exposed to Norwegian and English in Norway (note that some elements of this work were already presented in an article published in 1992). By language mixing, she refers both to utterances which contain elements of more than one language, as well as utterances entirely in

one language when the social context, as stipulated by the language choice of the parent, calls for the other language. In her study then, mixing meant any use of Norwegian on the part of the children towards their American mothers, and, conversely, any use of English towards their Norwegian fathers. Her overarching goal was to explain the children's mixing by examining the way in which they were socialized into language use within their families.

The research method consisted of in-depth case studies of two children from two different families. Certain social variables had to be the same, but one particular variable, explained below, had to be different. In both families the father was Norwegian and the mother American, and in both families the mother was the primary caregiver. But Lanza chose one family which followed the one person, one language strategy, and another which did not. This difference in input was a major feature of her investigation. The main data were monthly audio recordings of conversations of the children and their parents, recorded by the parents. The age of the children in the recording samples analysed were 1;11–2;7 (Siri) and 2;0–2;3 (Tomas). In addition to the recordings, she also made use of parental diaries, informal interviews with the mothers and her own observations (pp. 91–93).

While various aspects of Lanza's investigation are referred to throughout the present study, in this section I describe one main theoretical tool developed in her work, namely her classification of "parental discourse strategies"[9] in response to children's language mixing. This theoretical approach forms the basis of one analysis of the data in the present study (see chapter seven).

The language of the parent was considered the base language in dyadic conversations with the child, and, as stated above, any utterance of the child not in the language of the parent was considered an instance of language mixing. Five categories of responses or "discourse strategies" towards such mixing were identified (pp. 262–268). These strategies were ranged on a scale depending on the extent to which they promoted a monolingual context, i.e.

[9] "Discourse strategies in B[ilingual] F[irst] L[anguage] A[quisition] are conversational patterns that express the speaker's wishes and expectations regarding language choice" (De Houwer 2009: 134).

the use of just the parent's language, or a bilingual context, i.e. the use of two languages in the conversation. The model below shows five basic reactions of parents to instances of child language mixing. Note that a number of these overlap with Döpke's (1992: 63–70) insisting strategies described above.

MONOLINGUAL CONTEXT				BILINGUAL CONTEXT
Minimal Grasp	Expressed Guess	Adult Repetition	Move On strategy	Code-Switching

Figure 2.1: Parental strategies towards child language mixes (Lanza 2004: 268)

The first is the "minimal grasp" strategy, whereby the parent feigns non-comprehension by saying something like "I don't understand" or "Say that again", or by using a Wh-interrogative (p. 263). Such a response indicates to the child that the onus is on them to look for the trouble spot in the conversation and to repair the utterance. This strategy is the most highly constraining one of the five. Firstly, the illocution is that the child has used the inappropriate language. Secondly, it hinders the flow of conversation. And finally, it demands a content response (rather than a yes/no answer) on the part of the child. We have to bear in mind, however, that it may or may not be clear to the child that the trouble spot is the choice of language; the response of the child will usually reveal this. The following two examples illustrate the minimal grasp strategy in action: in Example 2.6, the child has understood that the trouble spot is language choice, while in Example 2.7, the cue has been missed.

Example 2.6 **Minimal grasp: illocution understood by child** (p. 255)[10]

Siri: Mama **lʊpe**/ (*run*)

Mother: What do you want Mama to do? ← **minimal grasp**

Siri: run/

[10] Lanza's examples are formatted differently. They do not have the names of the strategies marked within the examples, nor these titles. Also, the examples I present do not all appear in the section in which she describes parental discourse strategies. The transcription symbols are as in the original.

Example 2.7 **Minimal grasp: illocution not understood by child** (p. 306)

Mother: You're gonna eat some food?

Tomas: **og** Mama/ (*and*)

Mother: What am I gonna do? ← **minimal grasp**

Tomas: **spis**/ (*eat*; stem form of verb)

Mother: What am I gonna do? ← **minimal grasp**

Tomas: **spise**/ (*eat*; infinitive)

Mother: Eat? ← **expressed guess**

Tomas: yeah/

Mother: Can you say 'eat'?

Tomas: eat/

The minimal grasp strategy corresponds to Döpke's "not-understanding" (Döpke 1992: 65) within her categorisation of "insisting strategies", that is, her second most constraining category.

The next most constraining strategy is the "expressed guess", which, like the minimal grasp strategy, is also a request for clarification. It corresponds to Döpke's "translation plus question" (1992: 64). An example of this strategy can be seen in 2.7 above. This strategy has two main similarities and one main difference to the minimal grasp strategy. Firstly, here too the illocution is that the choice of language is not appropriate. And secondly, the flow of conversation is interrupted, since there is a repair to be made. However, the difference to the minimal grasp strategy is that the second part of the adjacency pair is less demanding on the child since it only entails a yes/no answer. Rather than the child having to reformulate the utterance, the parent does so. The parent then expects confirmation or disconfirmation from the child. Another example of this strategy is reproduced in 2.8, this time one which includes an expansion of the child's utterance.

Example 2.8 **Expressed guess, including expansion** (p. 263)

Siri: **tiss**?/ (*pee*)

Mother: Aw, is he peeing? ← **expressed guess**

Siri: yeah/

The third strategy, "adult repetition", falls in the middle of the continuum. As with the expressed guess the parent repeats the child's meaning in the other language. Thus, there is still a signal that the child's language choice was not appropriate. The difference is that this time the adult's response is not in the form of a question. The strategy is thus less constraining since the child is not required to respond. It is also less effective in promoting a monolingual context since, as the parent has obviously understood the child's utterance, the parent's own bilingualism is more exposed. Lanza notes, however, that although no response is required, the child may nevertheless repeat the adult's reformulation, which would indicate that she had understood the strategy as a repair (p. 265). An example of this can be seen in 2.9.

Example 2.9	**Adult repetition** (p. 265)
Father:	En, to, tre, fire, fem, seks, sju, åtte, ni–
	(*one*, *two*, *three*, *four*, *five*, *six*, *seven*, *eight*, *nine*–)
Siri:	ja/**ten**!/
Father:	Ti! (*ten*) ← **adult repetition**
Siri:	ti!/ (*ten*)

The strategy clearly corresponds to Döpke's "translation" strategy, and presumably also to her "non-incorporated translation" strategy.

In the fourth strategy, the "move on strategy", the flow of conversation is not impeded in any way since the parent simply continues with the conversation (p. 265). Lanza points out that this strategy is not always easy to recognise; it does not involve just any continuation following a mix, but rather those responses which show comprehension of the mix. For the response of the adult to count as a move on strategy, it must, therefore, be "topic-continuing", rather than "topic-initiating". A topic shift might send the message to the child that the parent has not in fact understood – a response which would be more in line with the negotiation of a monolingual context (Lanza notes that there are no such topic shifts following mixing in her data). The strategy is toward the bilingual end of the continuum for the following reasons: even though when using this strategy parents continue to speak their own language, their bilingual identity has been made clear by their obvious

comprehension of the child's mix. Moreover, the metalinguistic message conveyed to the child is that it is perfectly acceptable for the child to use the other language. There is no negative sanctioning, and conversation continues unimpeded. It is a no-constraint strategy. An example of moving on can be seen below.

Example 2.10 **Move On strategy** (p. 277)
Siri: **takk**/ (*thanks*)
Mother: You're welcome. ← **Move On strategy**

With the fifth and final category, "code-switching", the child's mixing actually triggers the parent's switch to the other language. The adult's switch may be intra-sentential or inter-sentential. An example of the former is given below. With this strategy, it is made clear to the child that the parent not only accepts the child's own utterances in the other language but can and is willing to speak that language herself.

Example 2.11 **Code-switching** (p. 266)
Siri: **borte**/ / /**borte**]/ (*gone*)
Mother: / /**Borte**]. ← **Code-switching**
Siri: **borte**/
Mother: The girl is **borte**, yeah. Little Miss Muffet. Mhm. ← **Code-switching**

Finally, Lanza addresses what seems on the surface to be a mix of strategies but what can be isolated as one of the five according to their function. The example she gives is the following:

Example 2.12 **Repetition of child's mix followed by another strategy** (p. 267)
Siri: **jeg mett**/**jeg mett**/ (*I full*)
Mother: You're **mett**? What does Mama say?
Siri: fu::ll/
Mother: Full. That's a girl!

In this example, Siri's mother repeats the child's mix, then asks a Wh-interrogative. Thus, according to the classification above, we have two responses: a code-switch and a minimal grasp. Nevertheless, the function of the turn, overall, is that of negotiating a monolingual context. Lanza therefore classifies this instance as the use of a minimal grasp strategy.

The analyses of the parents' discourse strategies, as well as the children's responses to them, revealed a relationship between the types of strategies used and the level of lexical mixing[11] of the child (p. 322). At the beginning of the study Siri's mother made most use of the expressed guess and repetition strategies, which gave the child a chance to learn vocabulary. As time went on, however, she increased her use of the minimal grasp strategy (pp. 273, 281), that is the highest constraint strategy. Like this, she was able to "socializ[e] Siri into the appropriateness of English-only with her mother" (p. 281). Siri's father, on the other hand, negotiated a more bilingual context with his daughter, for example by modelling the child's utterances in English (p. 323). Interestingly, Siri did not appear to interpret her father's use of the most monolingual strategies (minimal grasp and expressed guess) in the same way as with her mother. An analysis of Siri's responses revealed that Siri did not always interpret these requests for clarification as a cue to switch languages (pp. 286–288). Siri had not been socialized by her father into "Norwegian-only with father", and thus read the cues differently.

Lanza demonstrates that these different parental styles explain the fact that Siri engaged in less lexical mixing in her weaker language with her mother, than she did in her stronger language with her father. Tomas's parents, on the other hand, both employed strategies favourable to a bilingual context. The message sent to Tomas, therefore, was that either language was acceptable. Tomas mainly used his stronger language, Norwegian, with both parents. He also used some English, again, with both parents. Lanza concludes that the children's "sensitivity to context" is reflected in these language use patterns (p. 323).

[11] See Lanza (2004: 215) for a definition of lexical mixing, as well as section 5.2.2 of this book.

One further point I would like to discuss in this summary is the relation between amount of input and language output. In terms of amount of exposure, the community language, Norwegian, "gained increasing importance for each child over time", while trips to the United States undertaken by both families in the study could be seen to affect the children's production of English (p. 250 and ch. 5). But how does this variable interact with that of the parental discourse strategies? In the conclusion of chapter six, Lanza poses the following question about Tomas's language use patterns:

> Had Tomas not attended the [Norwegian language] play school and had he received the equal amount of input as Siri, would his language use patterns with his mother have been the same, given her interactional style towards mixing? (p. 317)

And indeed, a similar type of question could be posed for Siri: Had she attended a Norwegian-language play school for three hours a day like Tomas, would her mother have been so successful in fostering her English?

While these questions remain, the overarching aim of the study, namely to offer explanations of language mixing in infant bilingualism via the examination of language socialization processes is clearly achieved. This, and an earlier report on Siri (Lanza 1992), inspired a number of linguists to make use of Lanza's "parental discourse strategy continuum", and these studies will be discussed briefly below. The studies presented in the rest of this chapter are presented chronologically since the researchers build on the work of their predecessors.

2.3 Nicoladis and Genesee (1998)

Nicoladis and Genesee replicated Lanza's 1992 study with five children aged c. 2;0–2;6 growing up with English and French from birth in Montreal. Their two research questions were how parents' discourse strategies affected a) the children's overall rates of code mixing and b) the children's language choice in the next conversational turn (p. 87). Their criticism of Lanza's study was that "no systematic empirical link [had been] made between Siri's codemixing and her parents' differential use of specific speech acts" (p. 87).

In their own study, the different results from the five children were all pooled together. The overall results of the study reveal no correlation between the use of parental discourse strategies following a child's lexical mix and the children's rate of mixing. More monolingual strategies did not correlate with less mixing (and the converse). Similarly, there was no positive correlation between the parental discourse strategies and the language employed by the child in response. On the contrary, following a minimal grasp, the children (if they responded) continued to codemix almost 90% of the time (p. 95).

However, Nicoladis and Genesee do not make detailed analyses of any of the interactions. Thus, we do not know what cue the children attached to the minimal grasp strategy. Presumably, the children did not perceive language choice as the trouble spot, since they repeated their previous utterance 88% of the time. There is evidence in the study to support this interpretation, namely the fact that "the parents […] used a preponderance of the more bilingual strategies" (p. 96). This is akin to Tomas's mother in Lanza's study – and Tomas normally did not interpret the minimal grasp as a cue to speak his mother's language either (Lanza 2004: 305). This was because, as described in section 2.2, Tomas had been socialized into conversations in which it was acceptable to use either language. As an explanation as to why the children did not respond to the minimal grasp by switching languages the authors themselves make two suggestions. First, that "cognitive abilities may play a role in children's abilities to respond to subtle implicatures of discourse strategies", and second, that such pragmatic sensitivity may "require a certain threshold of proficiency" in both languages (p. 97).

The approach taken by Nicoladis and Genesee is fundamentally different to that of Lanza, since it is quantitative to the exclusion of qualitative analysis. Indeed, Lanza (2001), in her response to Nicoladis and Genesee, points out that when she recalculated Siri's data according to their criteria, she found no connection between the use of parental discourse strategies and Siri's level of mixing. Yet, she adds, "an indepth interactional and developmental analysis of the data as done in Lanza (1997) has shown that that is not what is going on Siri's family" (2001: 226).

2.4 Kasuya (1998)

Kasuya examined the language choice of four young Japanese–English bilinguals in the United States. The four children were all first-born boys aged approximately 2;10 at the time of the first recording and 4;1 at the time of the third and last one (pp. 331–332). Each had one parent whose first language was Japanese and one whose first language was English. Kasuya tried to determine how the children's use of Japanese was affected by how consistently the Japanese parent used Japanese, as well as the Japanese parents' use of discourse strategies. She found that with regard to the amount of Japanese input from the parents there were great individual differences. The scores of the relative amount of Japanese compared to English used in conversation with the children differed from 100% for one parent (in the third recording) and 64.4.% for a different parent (in the second recording). The latter used the least Japanese in all time periods, and also talked less in general than the other Japanese parents (p. 341). Kasuya sees a correlation between this relatively low quantity of Japanese input compared to the other parents and the small amount of Japanese used by the parent's son, Ray. Ray's highest score for relative use of Japanese compared to English was just 23.9% in the final recording, by which time the other three children were using Japanese over half of the time.

Where parental discourse strategies are concerned, Kasuya (p. 333) used a six category scale based on the strategies outlined by Döpke (1992) and Lanza (1992, 1997). The two most constraining strategies were 1) "Instruction", that is telling the child to say something in Japanese by using an explicit word such as "say" or "tell" and 2) "Correction", which meant not only correcting or expanding on the child's utterance but also informing the child explicitly that he was wrong (pp. 337, 344). These two categories were termed "explicit" strategies. Three less constraining strategies (two that are similar to Lanza's repetition strategy, the other one similar to the move on strategy) were termed "implicit" strategies. The sixth strategy was code-switching. Kasuya found that for three of the four children, an explicit strategy influenced the child to choose Japanese as his next language choice to a greater extent than an implicit one. For the fourth child, Sho, this was not the case. Kasuya explains this difference with Sho's greater linguistic development, in

particular in English. She suggests that for this reason Sho took more initiative in conversation. Kasuya illustrates this with an example of the mother trying to teach him a vocabulary item in Japanese and him responding by trying to teach her (his version of) the item in English (p. 340).

It is interesting to note that Ray was one of the three children who responded to an explicit strategy by using Japanese more often than not as his next choice of language. Yet Ray used the least Japanese of all four children. If we examine the figures for all of the parental discourse strategies (table 7, p. 339) we see that the parental discourse strategy used most often by Ray's mother is code-switching, and this 45.3% of the time. This is the highest score for any strategy for any parent. Thus, explicit strategies seem to have "worked" for the next choice of language, but the overall language use patterns of Ray's mother were more significant for his general willingness to use Japanese.

2.5 Juan-Garau and Pérez-Vidal (2001)

These authors trace the bilingual development of a boy aged between 1;3 and 4;2 growing up with Catalan and English in Spain. Their aim was to examine the "relationship between the child's degree of bilingualism and features of parental input" (p. 59). They follow Lanza's parental discourse strategy model. The father spoke the minority language, English, the mother Catalan. I will focus here on the way in which the father managed to foster the child's English. At the beginning of the study, the father made much use of the move on strategy and the repetition strategy. The first ensures flow of communication with the very young child and the second provides vocabulary in the minority language. However, about half way through the study the father began negotiating a monolingual context. He did this by using higher constraint strategies, as well as by introducing an ingenious teaching technique, namely two "monolingual" puppets who could only understand English (p. 63). The authors state that the "child respond[ed] to his father's higher linguistic and communicative demands with a spectacular progression in his productive use of English" (pp. 81–82, see also table 3, p. 73).

In tracing how the father endeavours to, and succeeds in, creating a monolingual context in the second half of the study, the authors provide good evidence of the effect of parental discourse strategies and teaching techniques, since the father's change in strategy was reflected clearly in the child's change in linguistic output.

2.6 Comeau, Genesee and Lapaquette (2003)

Comeau, Genesee and Lapaquette tested the "modeling hypothesis" which states that children's mixing rates are related to rates of mixing in the input (p. 113). They examined rates of mixing among six French-English bilingual children (average age 2;4) with an assistant with whom the children were not previously acquainted, in three different sessions. The assistant was a native speaker of the child's weaker language and spoke that language to the child. She also mixed in a small amount of the child's stronger language in the first and third sessions and considerably more in the second. According to the prediction of the hypothesis, the children would increase or decrease their own rates of mixing according to their interlocutor. The reason for choosing a stranger was to avoid the possibility of the children following language socialization patterns already established with someone they knew. All of the children increased their rates of mixing in line with that of the adult from session one to session two, and five of the six decreased them again from session two to session three. The authors conclude (p. 113) that

> these children were sensitive to the language choices of their interlocutors and that they were able to adjust their rates of mixing accordingly; further they appeared to do this by matching their language choice with that of their interlocutors on a turn-by-turn basis.

They are unable to explain the increase of mixing for one child in the last session. Lanza however points out that this particular girl's mother was the parent who mixed most with her child herself (2004: 332). Thus, language socialization patterns may extend into even carefully controlled experiments with strangers.

2.7 De Houwer (2007)

De Houwer reports on rates of active bilingualism from a large-scale survey in Flanders, and connects these with general home language use patterns. Via primary schools, she obtained data from 1,899 bilingual families with at least one child aged between six and ten. The results of the survey (taken from the summary in De Houwer 2009) were as follows. All children were able to speak the majority language, Dutch.[12] In addition, 71% were able to speak a minority language. The rates however were very different "depend[ing] on how home language use [was] divided among the parents" (2009: 9). For example, in those families where both parents only spoke the minority language, or at most one parent also spoke the majority language, 96% of the families had children who spoke the minority language. However, in families where both the parents spoke the majority language and one also spoke the minority language, only 36% of families had children who spoke the minority language. In single-parent families, when the parent spoke just the minority language, the children also spoke it in 42/46[13] families. When the parent spoke both languages, the children spoke the minority language in 50/75 families (2009: 10).

Two important results were obtained in this survey, namely that "[t]he 'one parent–one language' strategy did not provide a necessary nor sufficient input condition" for active bilingualism and that families in which both parents spoke the minority language and "where at most one parent spoke the majority language" had the highest chance of having children who also spoke the minority language (2007: 411).

2.8 De Houwer (2009)

The final work I would like to mention is by the same author. It is not a study but a textbook – the first – on bilingual first language acquisition. The book is based on De Houwer's own work in bilingualism, as well as on the research of others. Besides the aspects described in the studies above, De Houwer also discusses the importance of parental attitudes and beliefs in whether children

[12] "Dutch" rather than "Flemish" is consistently used by both authors and people interviewed when referring to the language variety spoken in Flanders.
[13] Percentages for higher figures and raw numbers for lower figures are reproduced as in De Houwer (2009: 9–10).

learn to speak the two languages they are exposed to (chapter 4). She notes that a positive attitude towards bilingualism is essential; however, she also offers examples of how parents' positive attitudes can be destroyed or at least shaken by the negative attitudes of outsiders (other family members, professionals). Further, De Houwer discusses what she calls "impact belief" (pp. 92–96). By this she means that "[a] belief that the language environment matters and can be manipulated […] supports children's speaking two languages" (p. 96). In this context, De Houwer stresses how parents can manipulate the quantity of language input. Further, De Houwer describes several cases in which children being raised exposed to two languages simply did not hear one of the two often enough to learn it. She reports, for example, on an American father living in Belgium, who was his children's only source of English. The father spent approximately three hours a week with his children, and was angry that the eldest, a three-year-old, not only could not speak English but could not even understand it very well. De Houwer offers this case as evidence of a lack of impact belief. The father believed that his children would just "pick up" English, and had no concept that a minimum amount of input on his part was required. Note that De Houwer discusses impact belief above all in relation to quantity of input, but of course it is equally applicable to any type of input, e.g. what parental discourse strategies are used. One final point to be mentioned is the influence of a variety of media. De Houwer (2009: 99) argues that television has little effect on very young children's language development. By contrast, she cites evidence that reading books to two-year olds greatly stimulates their vocabulary learning.

2.9 Conclusion

In this chapter, I have described in detail two key pieces of research in which very young children's bilingual language development is related to factors in their environment: Döpke (1992) and Lanza (2004). I have then sketched a number of further studies. Four of these rely on theoretical frames developed above all in Lanza: Nicoladis and Genesee (1998), Kasuya (1998), Juan-Garau and Pérez-Vidal (2001) and Comeau, Genesee and Lapaquette (2003). The fifth study described, De Houwer (2007), is a large-scale survey. Unlike the other studies listed above, which exclusively concentrate on the bilingual development of pre-school age children, the data are drawn from families

with at least one child aged between six and ten. Finally, I have discussed factors described in De Houwer's synthesis of bilingual first language acquisition research (2009). Based on the findings in these studies, a number of factors appear to be salient with regard to the promotion of active bilingualism among young children:

1 Consistency in following "one person, one language"

The findings of various studies reveal that consistency in the input favours consistency in the output. That is, if a parent is consistent in speaking the minority language, it is more likely that the child will speak that language than if that parent is not consistent. In Lanza's study (2004), the family which did not follow the one person, one language strategy had a child who spoke very little of the minority language. Kasuya (1998) found that the mother in her study who was least consistent in speaking the minority language also had the child who produced the least of it compared to the other children. Comeau, Genesee and Lapaquette (2003) found that differences in levels of mixing in three different sessions by an adult investigator led to differences in the levels of mixing of the children observed. Note that the latter study is not concerned with parents' consistency in following the one person, one language strategy, but the theoretical implications are the same: levels of consistency in the adult input affect levels of consistency in the child's output.

Nevertheless, we also see that even if a parent *is* consistent, this is no guarantee for active bilingualism. Döpke's study (1992) clearly reveals this; all the parents who spoke the minority language in her study were highly consistent in their use of it with their children, yet only two of the six children were actively bilingual at the end of the study. De Houwer (2007) similarly found that the pattern of the one person, one language strategy in bilingual families was no guarantee for active bilingualism; note, however, that since this was a survey which simply asked which languages were spoken in the home, the question of consistency could not be addressed.

2 Amount of input

Döpke (1992) finds no correlation between the extent of exposure to the minority language and the children's bilingual development. However note

that with regard to one of the actively bilingual children, I reach a different conclusion. In De Houwer's (2009) case descriptions, we see that a minimum amount of input is required; just how much that needs to be, however, remains unclear.

3 Language constellations

According to De Houwer's (2007) large scale survey the language presentation pattern in the home is a salient factor in active bilingualism. To reiterate: when both parents spoke the minority language in the home (and at most one parent spoke the majority language as well), 96% of the families in her survey had children who also spoke both languages. However, when both parents spoke the majority language and one parent also spoke the minority language, only 36% of the families had children who were actively bilingual.

4 Variety of contacts

Döpke (1992: 57–63) claimed to find no evidence of the importance of this factor. However, note that I come to a different interpretation of her data, since both actively bilingual children were indeed exposed to a variety of contacts, one particularly more than the other five children. The issue is not given prominence in other studies. De Houwer points out that bilingual children may hear their languages from just one person or more than one, and that "[t]o what extent such differences matter for BFLA[14] children's language development has so far not been studied" (2009: 101).

5 Variety of media

While this factor is sometimes mentioned it is not greatly discussed, and there does not appear to be clear evidence for its importance. We have seen that the father of Keith, one of the two actively bilingual children in Döpke's study, made an effort to expose his son to a variety of German-language media. Note, however, that De Houwer (2009: 99) states that television has little effect on the language development of very young children. We may speculate that when a minority language parent watches and talks about minority language films (or listens to and sings minority language songs) with their very young child, the development of that language is supported. This may have been the

[14] Bilingual First Language Acquisition.

case with Keith and his father, but details are not given. However, the same child watching the same film (or listening to the same songs) alone may not benefit much in terms of language development.

6 Parental discourse styles

The importance of the discourse styles of the parents in promoting active bilingualism is revealed in a number of studies. In particular, high constraint "insisting strategies" (Döpke 1992) or "parental discourse strategies" (Lanza 2004), whereby parents attempt to insist that the child use the minority language, have been shown to be important in the studies by Lanza (2004), Kasuya (1998), Juan-Garau and Pérez-Vidal (2001), and to a lesser extent Döpke (1992). We have seen that this was not the case in the study by Nicoladis and Genesee (1998); however, this could be explained by their non-qualitative approach.

Further, a didactic style of conversation was revealed to be of importance in the development of the minority language and thus in bilingual development. We saw in Döpke (1992) that the parents of both actively bilingual children used more teaching techniques than the other minority-language parents, as well as more than their majority-language spouses. We also saw how the minority language can be promoted via the parental discourse strategy of adult repetition, that is translating a child's utterance into the language being spoken by the parent, and thus furnishing the child with necessary vocabulary (Lanza 2004; Juan-Garau and Pérez-Vidal 2001).

I would now like to mention two factors described by De Houwer (2009: 89–96) which do not fit categorically with those described above since they are concerned with attitudes and beliefs which *affect* the factors just described, namely *positive attitudes* and *impact belief*. A positive attitude towards bilingualism is the basis for attempting to raise a child bilingually in the first place. Positive attitudes of parents are crucial, but the attitudes of outsiders can also play a role, in the sense that they can influence the behaviour of the parents. As for impact belief, when parents believe their language input has an influence on their young children's language development, children have a higher chance of becoming actively bilingual, since impact belief means that

parents are likely to try and manipulate the amount and type of input they provide.

A mere listing of factors in this way of course hides the complexity of how the factors interact. For example, the use of insisting strategies can only be successful if there is enough language input to start with. The study by Juan-Garau and Pérez-Vidal (2001) illustrates this very well. The minority language-speaking father did not insist on his son using the minority language (i.e. made little use of the minimal grasp strategy) in his earliest interactions with his son but focussed on providing enough input; he did this by often translating what the child said in Catalan into English (repetition strategy). Later, after the child had been exposed to a considerable quantity of English, the father changed strategy and began to insist that his son speak English. The authors note how important it is to provide vocabulary at an early stage; they state "only when the necessary language information is available to the child can the minimal grasp strategy be successful" (pp. 78–79). Thus, amount of input and insisting strategies interact. Another example concerns positive attitudes: while it is true that negative attitudes on the part of the parents towards bilingualism are not conducive to active bilingualism, positive attitudes alone are no guarantee for it. Döpke's study (1992) shows this very well, since all six sets of parents had positive attitudes towards bilingualism yet only two of the six children became active bilinguals.

The two key studies described in the present chapter, Döpke (1992) and Lanza (2004), offer convincing theoretical approaches for the analysis of bilingual language development in context, and a number of the other studies discussed provide further support for these approaches. It is within this sociolinguistic and pragmatic framework that I anchor my own study on trilingual language development, which is described in chapters four to eight of this book. First, however, in the following chapter, I review all trilingual language acquisition studies which are relevant to the question at hand.

3
Trilingual Language Acquisition Studies

3.0 Introduction

As stated in the first chapter, the body of trilingual language acquisition research is still relatively small. An overview of the few studies until the beginning of the century can be found in Quay (2001), while the state of the art is discussed in Quay (2011a). Trilingual language acquisition studies dealing specifically with the relationship between contextual factors and active trilingualism are quite rare. Besides my own preliminary work, based on a small portion of the data used in the present study (Chevalier 2008), a handful of articles focus on one or more aspects of this question. De Houwer (2004) correlated various parental language input patterns with a lack of active trilingualism among primary school-aged children in 244 multilingual families. Maneva (2004) examined the multilingual language acquisition of her daughter with a focus on the "sociocultural factors that appear to play a significant role in the acquisition process" (p. 110). Montanari (2005) investigated parental discourse strategies and the language choices of a young trilingual. Quay (2001) related a number of contextual factors to the proficiency, dominance, and language choices of a trilingual infant, while in a different trilingualism case study she looked at language socialisation patterns and language use at the dinner table (Quay 2008).

In the present chapter, I discuss the findings not only of the above studies; the chapter examines all case studies involving trilingual language acquisition and surveys involving multilingual families that provide some information relevant for the question at hand. Note that when linguists have described various aspects of trilingual development of the same child in different works, I focus on the most relevant study for the present purpose, supplemented with information from the other works when appropriate. Apart from the surveys and one further study (Helot 1988), I have only considered studies that analyse actual speech data (following Quay 2001). Note, however, that these analyses vary from "data-driven" meaning the use of "extensive natural language data with systematic analyses as […] evidence to discuss trilingual development" (Quay 2011a: 1) to the discussion of selected examples.

Since the focuses of the studies are often quite different, and since they do not all necessarily build on previous work, there is no need to present this overview in thematic or chronological order. For ease of reference, I therefore present the studies in alphabetical order. Following the description of each study I provide a table with a summary of contextual factors and descriptors of the child's (or children's) trilingualism.

It should be noted that the contextual factors listed in the tables in this chapter and those listed at the end of chapter two as being (possibly) influential for active bilingualism are not precisely the same. Since we are dealing with a more complex sociolinguistic situation, it was only to be expected that the trilingual language acquisition studies would reveal new aspects. Thus, for the third point mentioned in the conclusion of chapter two, *language constellations*, two particular patterns unique to trilingual language acquisition are listed, namely a) *Parents' languages are different from each other and from the community language* and b) *The local language is not the main language of communication between parents.* Further, the fifth point, *variety of media*, on its own was not often mentioned; however, the furnishing of a *stimulating linguistic environment* in general – sometimes including the use of a variety of media – came up more frequently. Then, since many of the studies do not focus on parental input, detailed information on the sixth factor, *parental discourse styles*, was often lacking. Therefore, I concentrated on the feature most often mentioned, namely whether or not caregivers used *insisting strategies*. Finally, as so many of the studies were conducted by parents of the subjects I also included this as a seventh category in order to test its possible relevance (*parent is linguist-investigator*).

The children's levels of active trilingualism are – unless the author has specifically examined this question – estimations gleaned from the descriptions given. The levels are estimated as ranging between "high", meaning the child uses the language of the interlocutor most of the time; to "some" meaning the child uses the language of the interlocutor regularly but not most of the time; to "low", meaning the child is mainly passive in at least one of the three languages.

3.1 Barnes (2006)

This study examines the development of one linguistic feature (questions) in one language (English) in a trilingual subject, Jenny, aged 1;11–3;6 (the subject is also described in Barnes 2011). The focus is thus quite different from that of the present study. However, Barnes's monograph (one of the few in trilingual language acquisition) is a recent case study of a young, trilingual child, and as such is among those which pay attention to input details – a feature often missing in earlier studies (see the overview of Quay 2001). The author provides, on the one hand, information concerning Jenny's language abilities and preferences in general, and on the other hand, a description of the language exposure patterns at home and outside of it (pp. 91–94). The two accounts taken together offer certain insights into the relationship between contextual factors and active trilingualism.

Jenny is the researcher's own daughter, the youngest of three children. She was growing up in the Basque Country and was an active trilingual: she spoke English, Basque and Spanish. Jenny heard all three languages more or less from birth: English from her mother, Basque from her father, and Spanish from the childminder. These were the native languages of all three speakers. The mother also spoke fluent Spanish and the father was bilingual in Basque and Spanish. The childminder was monolingual. Upon the birth of the children, the parents gave up speaking Spanish to each other (with great difficulty, Barnes notes, p. 91) and began speaking English to each other in front of the children. Thus, the family language was English, except for interactions specifically between the father and the children. Until the age of 2;5 Jenny heard all three languages in roughly equal proportions. After, she began attending a Basque-medium nursery school part-time. Her Basque input thus increased and her Spanish input decreased, but was still regular via the childminder. At 3;5 she began attending her nursery school full-time, so that Basque input once again increased, and Spanish once again decreased.

As stated above, at the end of the study, Jenny was actively trilingual. The acquisition of Basque was assured, since it was the language of the community, her nursery school, and one parent. There was also a good chance of success for Spanish since the childminder, who spent time regularly

with Jenny while her mother was at work, was monolingual. Further, the community is bilingual, comprising native speakers of both Basque and Spanish. Some of the Spanish speakers are monolingual, while all Basque speakers are also bilingual in Spanish. Thus, it was English which needed to be particularly promoted; Barnes, in a later article concerning child directed speech, makes the point that the child's exposure to English constituted "limited input" (2011: 46). One way of promoting English was the parents' decision to change from speaking Spanish to English. Further, the parent-investigator is a linguist. She notes (p. 222) that the parental discourse strategies she used were those in the "monolingual end and middle of [Lanza's] continuum" (minimal grasp, expressed guess, repetition). Barnes herself explains her daughter's success in learning English thus: "In Jenny's case, the languages were clearly demarked into monolingual contexts […] and rules for their use were strictly adhered to" (p. 208). Thus, three factors stand out. First, the equal proportion of input of the three languages (until 2;5). Second, the creation of monolingual contexts for all three languages. And third, the active promotion of the minority language (English) by making it the family language.

One further factor in this case study is of interest with regard to the relationship between quantity of input and output. Barnes calculated Jenny's MLU[15] in Spanish at 2;2, 3;2, and 3;8. At age 3;8, three months after Jenny started attending her Basque medium nursery full-time, her MLU in Spanish decreased, and was lower than her MLU at 3;2. For Basque, only increases are recorded (p. 113).

A summary of contextual factors and descriptors of the child's trilingualism can be seen in table 3.1, below. Most of the information in the table can be found on pp. 91–95 (Barnes 2006).

[15] Mean Length of Utterance. See section 5.2.1 for a discussion of this measurement.

Table 3.1: Barnes (2006)

Child	Jenny
Age	1;11.23–3;6.17
Data	32 sets of audio and video tapes (precise details given, p. 95)
Languages of caregivers, institutions, community:	
Mother's language	English
Father's language	Basque (bilingual with Spanish)
Local languages	Basque and Spanish
Childminder's language	Spanish
Day care language	Basque
Siblings' languages to child	English and Basque
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Similar proportions till 2;5, then more Basque than Spanish
3a Parents' languages are different from each other and from the community language	Mother yes, father speaks one community language
3b Local language is not main language of communication between parents	Yes, English is used
4 Variety of contacts in minority language	Some
5 Caregivers provide stimulating linguistic environment (reading aloud, songs, variety of media, etc.)	Mother and father yes, not childminder
6 Parents use insisting strategies	Mother: yes; father and childminder: not mentioned
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism:	
Active trilingualism at end of study	High
Child is dominant in community language	Not mentioned

3.2 Barron-Hauwaert (2000)

Barron-Hauwaert gathered data on ten trilingual families in: Belgium (3), Switzerland (3), Germany (1), France (1), the UK (1), and Nepal (1). These ten were among a number of families who had responded to advertisements for the study. The parents selected for participation had to:

- have children who were over two (i.e. children who could talk)
- speak different native languages and live in a third language area
- follow the one person, one language strategy.

Barron-Hauwaert's study does not focus specifically on reasons for active trilingualism, but it does, among other things, look at language input patterns and children's language dominance, and thus indirectly provides information relevant for the present study. In a questionnaire, the parents were asked to list their children's languages in order from strongest to weakest, named L1, L2, and L3. Younger children tended to have the mother's language as their L1, older children the community language. Thus, it is clear that the different amounts of language input the children received at different ages account for this pattern of language dominance. The exceptions to the pattern are also explained by the author as the result of the amount of input. Two families had children aged around three who were dominant in the community language, and not their maternal language – these children attended childcare in the community language. Further, the nine-year-old in England who had his father's language (Italian) as his dominant language, had attended school until age six in Italy.

The study reveals further points of interest. One is that in eight of the ten families, the children spoke the three languages (table 1, p. 2), that is, they were actively trilingual. Further, of the two remaining families, we can exclude one, since the child (judging from the data given in the appendix) had presumably not yet been exposed regularly to the community language. The true figure is thus eight out of nine. We shall see in De Houwer's large-scale survey (2004) below that not even half of the children in her study were actively trilingual. Barron-Hauwaert notes that the families involved in her study are not representative, since, as they responded to the advertisements in the first place, and agreed to fill in the questionnaire, they were clearly particularly interested in the issue (p. 10). In my view, there may be a further explanation for this high number. If we examine Barron-Hauwaert's Figure 2 (p. 3), it appears that only one set of parents used the community language as their main language of communication, while all the others used a parental language. According to De Houwer's study (2004), children have the best chance of becoming actively trilingual if the community language is *not* used in the home.

Finally, an issue also relevant to the present study is that of language prestige. Barron-Hauwaert looked at which language was chosen as the parents' main language of communication, and compared languages with high world status to those without. She found that in six families one parent spoke a "prestigious" language (English, French or Italian), while the other parent spoke a language which, outside its own specific language area, carried no particular prestige (Swiss German, Polish, Catalan, Dutch and Czech). In each of these families, the parents used one of the former languages as their main communication language. Thus, she concludes that parental languages with high world status may threaten those parental languages with lower world status (p. 3). She notes that particularly within a trilingual situation, a prestigious community language combined with a prestigious parental language is a "double threat" to a non-prestigious minority language (p. 4). The argument is highly plausible and should be borne in mind, although how this affected the children's language output in Barron-Hauwaert's own study is not clear, since most children were in fact actively trilingual.

In summary, Barron-Hauwaert's study provides a number of findings relevant for the question of contextual factors and active trilingulism. First, the different dominance patterns according to the age of the children – and thus according to the different amounts of input they received at different ages (home, nursery, school) suggest the importance of *quantity of input*. Second, *not having the community language as a main language of communication in the home* would appear to be a relevant factor. Finally, Barron-Hauwaert discusses the *relative prestige of the languages* involved, although her study does not show how this affects children's linguistic output.

In table 3.2 below, I include the same list of factors and descriptors of trilingualism used throughout this overview. Note that the list was designed for case studies of children from the same family, and is not ideal for a study of different families; for this reason information is missing for quite a few of the categories.

Table 3.2: Barron-Hauwaert (2000)

Child	12 children
Age	Aged between 2–12
Data	Questionnaire (not reproduced in article)
Languages of caregivers, institutions, community:	
Mother's language Father's language Local language	10 families with varying parental and community languages
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Increasingly community language with age
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	9/10 families (precise number not given, this proportion has been deduced from Figure 2, p. 3)
4 Variety of contacts in minority languages	Not mentioned
5 Caregivers provide stimulating linguistic environment (e.g. reading aloud, songs, variety of media, etc.)	Not mentioned
6 Caregivers use insisting strategies	No (see table 4, p. 7)
7 At least one parent is the linguist-investigator	No
Child's levels of trilingualism:	
Active trilingualism at end of study	Level not clear; only that in 8/10 families did children use parental languages
Child is dominant in community language	5/10 families

3.3 Braun and Cline (2010)

Braun and Cline propose a typology of trilingual families living in mainly monolingual societies. Their data consist of 70 parental interviews, 35 conducted in England and 35 in Germany. The families selected were those in which two non-community languages are spoken in the home. Braun and Cline categorise the language constellations found within this type of trilingual family, with the aim of seeing whether different constellations could have a bearing on the extent to which the parents spoke their native languages. The 70 families could be categorised into three types (pp. 116–117):

Type I	Parent A and Parent B speak one different native language each. Neither of them speaks the community language natively. No common native language. (24 families)
Type II	One or both parents speak two native languages (which may include the community language). (31 families)
Type III	One or both parents speak three native languages (which may include the community language). (15 families)

Braun and Cline found that 19/24 families of Type I were successful in implementing the one person, one language principle and in not using the community language with their children. However, among families of Types II and III, only 3/46 managed to do this (table 6, p. 119). Overall, parents in the latter two groups had difficulties in maintaining a third or even second language (pp. 119, 126). Braun and Cline attribute the success of the first group to the following factors: these parents were able to follow the one person, one language strategy more easily because "each parent was most competent in his or her only native language" (p. 126). Further, these parents tended to come from officially monolingual countries, and their children's grandparents were often monolingual. The need to pass on a language in which the children could communicate with their grandparents was an added incentive to maintain the home languages. Thus, although Braun and Cline do not give information on the children's levels of trilingualism, the authors conclude that parents of Type I "tended to be more effective in their efforts to bring up their children trilingually than parents who spoke two [...] or three [...] native languages" (p. 126). (I do not provide a summary table for this study since the focus of the study does not match the categories of the table.)

3.4 Cruz Ferreira (2006)

Cruz Ferreira reports on her children's simultaneous acquisition of Portuguese (via their mother) and Swedish (via their father), and their later acquisition of English (via day care and school). The focus of her monograph is the children's acquisition of Portuguese; however, the book provides much contextual detail on the acquisition of the other two languages as well. The three children, Karin, Sofia and Mikael, are the same ones reported on in Cruz Ferreira (1999). Only the youngest child, Mikael, was exposed to three

languages regularly, in a non-formal setting, in early childhood. He began acquiring English in a Montessori kindergarten in Hong Kong from age 3;1, and continued to do so at nursery school in Singapore from 3;11. His sisters' regular exposure to English began at ages five and seven. While both girls had daily tuition in English in order to help them start their formal education in this language, this was not found necessary for Mikael. Cruz Ferreira notes that "his teacher [in Singapore] in fact expressed surprise at the fact that he spoke other languages, in that his use of English was not different from that of his classmates" (p. 228).

In this family, the mother was the primary caregiver; thus, the children were exposed to a good deal of Portuguese. The father was professionally engaged, so the children had less exposure to Swedish from that source. The nature of the time the children spent with their father should, however, be noted: they greatly enjoyed their father's intensive play with them in the evenings. This aspect of undivided paternal attention has already been discussed within my description of Döpke (1992) in chapter two (section 2.1). To counteract the imbalance of time spent with the mother, and thus of exposure to the mother's language, the parents chose to speak Swedish to each other in front of the children. Although they had started out speaking English together, the parents had both become fluent in each other's languages by the time their children were born. (Recall that this strategy was also used by Barnes and her husband in order to promote English.) Besides overhearing their parents speaking Swedish, the children attended "Swedish Supply School" once a week: language and culture lessons taught by native speakers of Swedish in Swedish.

The parents followed the one person, one language strategy, and insisted that the children speak the parental languages. In the early years, the children predominantly spoke their mother's language, Portuguese, to each other; later this changed to English. Despite their eventual dominance in English, Portuguese and Swedish were actively maintained. The main reasons for this appear to be 1) sufficient quantity of input in both parental languages 2) promotion of the language for which the children had the least input by choosing it as the couple language and by organising formal lessons in that

language, and 3) the parents insisting that the children use the parental languages.

The table below summarises the data for Mikael, who is the only one of the three children whose language acquisition can be called "trilingual language acquisition" according to the definition used in this study. With regard to the community language, the information in the table starts from the point in Mikael's life when he was regularly exposed to English, namely at age 3;1 in Hong Kong.

Table 3.3: Cruz Ferreira (2006)

Child	Mikael
Age	Regular collection of data to 11;0, sporadic collection to 13
Data	For all three children: circa 22 hours of audio recordings, 24 hours of video recordings, diary notes (precise details given, pp. 40–49)
Languages of caregivers, institutions, community:	
Mother's language	Portuguese
Father's language	Swedish
Local language	English, among other languages in Hong Kong and Singapore
Day care language	English
Siblings' languages to child	Children first speak Portuguese together, then English
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	More input in maternal and community languages
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes, Swedish used
4 Variety of contacts in minority languages	Some contact on holidays in Sweden and Portugal; Swedish Supply School
5 Stimulating linguistic environment (reading aloud, songs, variety of media)	Yes
6 Caregivers use insisting strategies	Yes
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism:	
Active trilingualism at end of study	High
Child is dominant in community language	Yes

3.5 De Houwer (2004)

With data from her large-scale survey in Flanders (the same survey reported on in De Houwer 2007; see section 2.7), De Houwer investigated the correlation between language input patterns and, as she states, "the *lack* of active trilingual usage in the children" (p. 119). In a brief questionnaire, De Houwer asked the parents of primary school aged children which languages each family member spoke at home. From the over 18,000 questionnaires returned, approximately 300 families indicated that three or more languages

were spoken in the home. Of this latter set, 244 questionnaires contained data useful for analysis (see pp. 122–123 for selection criteria).

Children were considered to be actively trilingual if parents indicated that the children spoke two languages at home, not including Dutch (it was a given that all the children could speak Dutch, since they attended Dutch-medium primary school). Since the study was large-scale, the instrument used was a necessarily simple questionnaire (reproduced on p. 134). Whether children actively used a language was judged by whether the parents indicated that the children spoke it at home. Thus, it was up to the parents to judge how much of a language needed to be spoken for it to count as being "spoken at home".

One of the most important results of this study is that more than half of the children were not actively trilingual; 58% of the children exposed to three languages did not actually speak all three (pp. 124–125). De Houwer (pp. 126–129) found that two parental input patterns correlated with a lack of active trilingualism. The first was if the community language was spoken by the parents in the home. In more than four-fifths of the families in which the children were not actively trilingual the community language was present in the parental input (p. 126). The second was if both parents did not speak the same two non-community languages. In 70% of the families in which the children were not actively trilingual this was the case. (It should be noted however that the converse was not found to be true: among families with actively trilingual children these two factors did not play such a clear role.) Combined, one or both of these two input patterns were found in 93% of the families in which the children were not actively trilingual (p. 129).

The scale of the survey naturally means that further factors such as parental consistency in language use, parental insistence on language use, and so on, cannot be taken into account. On the other hand, the size of the survey gives us clear results with regard to one possible factor, namely language constellations, and thus extremely useful findings with regard to the overall question of what influences active trilingualism. (For the same reasons as for Braun and Cline, above, I do not provide a summary table for this study.)

3.6 Dewaele (2000, 2007)

Dewaele sketches in two short articles the language development of his own trilingual daughter, Livia. Livia's parents spoke their native languages to their daughter, the father French and the mother Dutch; the parents spoke Dutch to each other. The family lives in London. From the age of five months to 2;6, Livia spent her mornings with her father and her afternoons with a childminder who spoke English and Urdu to her. At 2;6 she started English nursery school. Dewaele writes that when Livia was three years old, she had an active knowledge of English, Dutch and French and a passive knowledge of Urdu (2007: 69). By age ten, she had lost Urdu through lack of exposure but was still fluent and sounded native-like in her other three languages. As the girl became stronger and stronger in English, through schooling and friends, the parents no longer insisted that Livia answer them systematically in French and Dutch, feeling that it was unreasonable, and also difficult for her to translate, for example, what her teacher and friends had said. They had concerns that insisting would "stifle" her expression, and also believed that too much insistence could result in the girl's refusal to speak the parental languages at all. However, Dewaele notes that this relaxing of the strategy "inevitably opened the gate to English", and that Livia began to report more and more in English "even the things that 'happened' in French or Dutch" (2007: 71).

Dewaele's description of his daughter's language use at home in London, and on holidays in Belgium shows very clearly how exposure patterns affect linguistic production. He notes that her "proportion of utterances in English spoken at home typically peaks before a holiday". On holidays, however, the family spent more time together. In addition, when they were on holidays in Belgium, Livia had exposure to other native speakers of Dutch and French, both family members and friends. The children she played with there were generally monolingual speakers of Dutch, and Livia "manage[d] to cut the code-switching and stick to a monolingual language mode" (2007: 71). Her preference for English sank a little, but returned as soon as she was back in her school environment.

The 2007 article does not describe in detail Livia's language choice with each parent. However, Dewaele informs me that his daughter (age fifteen at the time of writing) normally uses her paternal language with her father and her maternal language with her mother, and is highly proficient in each. From the information given in the texts with regard to Livia's upbringing, it would seem that the following factors are significant for Livia's active trilingualism. First, the dominant language of communication between the parents was not the community language, English, but Dutch. Second, there were regular holidays to Belgium where the child could (and needed to) use her other two languages, not only with adults, but, in the case of Dutch, also with peers. Third, there seems to have been rich input in each of the minority languages. For example, when Dewaele describes Livia's level of comprehension in Dutch and French, we learn that he and his wife read novels to her as sophisticated as Dumas' *Trois Mousquetaires* (2007: 69). Finally, could the high prestige of French in the English-speaking world have helped? In an interview Livia herself gave about her trilingualism (interview text supplied to me by Dewaele), she notes that her friends make comments like "I wish my dad spoke French with me". Helot (1988) and Wang (2008), below, both comment on the prestige of French as a possible motivating factor.

Table 3.4: Dewaele: (2000, 2007)

Child	Livia
Age	2000: to age 3; 2007: to age 10
Data	Video recording "at regular intervals", diary (2000: 41, no further details)
Languages of caregivers, institutions, community	
Mother's language	Dutch
Father's language	French
Local language	English
Childminders' languages	English and Urdu, half days (0;5–2;6)
Day care language	English (from 2;6)
School language	English
Further contextual factors	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	From 2;6 more of community language
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes, Dutch is mostly used
4 Variety of contacts in minority languages	On holidays. Also peer exposure for Dutch
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Yes
6 Caregivers use insisting strategies	2000: Yes, not clear how much 2007: Less after the start of school, father somewhat more than mother
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism	
Active trilingualism at end of study	High
Child is dominant in community language	Yes

3.7 Faingold (1999)

Faingold sketches his son's exposure to, and use of, four languages. The child, Noam, heard Portuguese from his mother and Spanish from his father. The family lived in Israel, so he was exposed to Hebrew from the local community. The parents each spoke their own native languages to each other. Noam was actively trilingual in Portuguese, Spanish and Hebrew until about 2;10. Around this stage, he began to only use the community language, Hebrew. By the time Noam was about three and a half, the parents were also responding in Hebrew. Noam only spoke Hebrew for the next three years. When Noam was six, the family moved to the United States, so the child's

community language changed to English. Within about half a year of living in the States, the child had become fluent in English, and shifted to speaking only that language. The parents shifted with him, and mainly used English with him. At the age of twelve, however, Noam was studying both Spanish and Hebrew, at school and through Jewish organizations. He had become interested in re-acquiring these languages, and was making good progress. The author notes that he had begun to use Spanish when speaking to his relatives. (Portuguese is not mentioned.)

The connection between the patterns of language exposure and the child's linguistic output in this study is quite plain. After initially being actively trilingual, the child shifted to exclusively speaking the community language, first in Israel and then in the United States. The parents reinforced his choice by adapting to the child's language preferences. Faingold explains Noam's refusal to speak the minority languages with the following factors:

- lack of peers who speak the minority languages;
- low status of the minority languages: Spanish and Portuguese are not prestigious in Israel unlike e.g. English and French; in the United States, Spanish had low status in Noam's primary school;
- parents being fluent in majority languages.

Faingold explains the re-emergence of Spanish and Hebrew as a result of the child developing more positive attitudes as a reaction to his surroundings: the parents were keen to maintain their Jewish heritage, and Spanish was a subject in secondary school and as such had a certain status.

Table 3.5: Faingold (1999)

Child	Noam
Age	To 14;3
Data	Audio-recording once a week from 0;10–3;0, diary from 0;6–14;3 (precise details given pp. 283–284)
Languages of caregivers, institutions, community:	
Mother's language	Portuguese
Father's language	Spanish
Local language	Hebrew till 6,0, then English
Childminders' languages	Hebrew, 0;6–2;0
Day care language	Hebrew, 2;0–6;0
School language	English, from 6;0
Further contextual factors:	
1 Caregivers follow 1P/1L	Until about 3;6
2 Amount of input	More community language
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes (each speak own language)
4 Variety of contacts in minority languages	No
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Yes
6 Caregivers use insisting strategies	No
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism:	
Active trilingualism at end of study	Low; some re-acquiring of minority languages via formal schooling
Child is dominant in community language	Yes

3.8 Helot (1988)

Helot interviewed two families in Dublin, whose children were exposed to French, Irish, and English. My remarks concern only the second family since the first is not a case of trilingual language acquisition according to my definition (see chapter one). The information on the data collection is not very detailed; it is not clear whether all family members were interviewed or only the parents. Nevertheless, it is an interesting report on how minority languages can be successfully promoted, and for this reason I include a brief discussion of Helot's study in this overview. In the family in question, the foreign language, French, was promoted as the family language. The French

mother spoke French to the children, and the Irish father spoke French to them more often than Irish (his native language) or English. The parents also spoke French to each other. The dominant community language, English, was thus basically kept out of the home – a point which Helot states is of great importance (p. 286). The children, in turn, used French mostly with their mother, and more often with their father than any other language. They also often used French with each other. The de facto minority language within the officially bilingual community, Irish, was promoted by being chosen as the school language. A further point that Helot notes is that both French and Irish enjoy high prestige in Ireland: the former as the most prestigious foreign language taught in schools, the latter for reasons of identity (p. 285). The children were, apparently, fluent in all three languages.

Table 3.6: Helot (1988)

Child	Two children (family 2)
Age	9;0 and 7;0
Data	Interview (questions not reproduced)
Languages of caregivers, institutions, community:	
Mother's language	French
Father's language	Irish
Local languages	English, to a lesser extent, Irish
School language	Irish, from age four
Siblings' language	Children often spoke French together
Further contextual factors:	
1 Caregivers follow 1P/1L	No, both parents speak French to children
2 Amount of input	Much input in minority languages, input in majority community language kept to minimum
3a Parents' languages are different from each other and from the community language	Different from majority community language (English)
3b Local language is not main language of communication between parents	Yes, French spoken
4 Variety of contacts in minority languages	Irish, yes. French: probably on holidays (see p. 284)
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Yes, children taught to read in French before starting school
6 Caregivers use insisting strategies	Not mentioned
7 Parent is the linguist-investigator	No
Child's levels of trilingualism:	
Level of active trilingualism	High
Child is dominant in community language	Not mentioned

3.9 Hoffmann (1985)

Hoffmann's is one of the earliest studies of trilingual language acquisition. Hoffmann describes the language development of her two children, Cristina (till 8;5) and Pascual (till 5;6), who were exposed to German, Spanish, and English. The children heard German from their mother, Spanish from their father, and lived in the United Kingdom where they were regularly exposed to English upon the start of play-school at 2;9 and 3;1 respectively. They were also looked after by eight au pair-girls (time frame not given), six of whom were native speakers of Spanish, and two of whom were native speakers of German. Spanish-speaking relatives and friends visited regularly, German-speaking ones sometimes. The children had holidays in Spain and Germany,

the latter being particularly important since for five years in a row the children spent three to four weeks each summer there, staying with a family with children their own age.

Hoffmann provides evidence that Cristina's dominant language was Spanish until she began school, when it changed to English. Pascual's was Spanish, then German, then English. She explains that Pascual's change from dominance in Spanish to dominance in German was brought about by one German childminder who looked after him for several hours per day between the ages of 2;5 and 3;3 and "gave him a great deal of attention and stimulus" (p. 484). Explanations for both children's dominance in Spanish in the early years are not given. We may speculate that the following factors played a role: the majority of the au-pair girls were Spanish speakers (p. 481), visits from Spanish-speaking relatives and friends were more frequent than those from German-speaking relatives (p. 481), and the Spanish-speakers loved engaging in conversation (p. 489). In addition, the parents may have used Spanish as their main language of communication. The study does not mention which language the parents spoke at home together, except that it was not English (p. 490).

By the end of the study the children were indistinguishable from monolingual English-speaking children. Their Spanish and German were "sufficient for all everyday practical purposes" as well as for "personal and emotional interaction between the children and the parents" (pp. 493–494). Hoffmann explains the children's levels of linguistic competence in the minority languages with the following factors:

- the children had a rich linguistic environment in their minority languages:
    - the Spanish-speakers that the children were in contact with were gregarious, enjoyed conversation, and were good mimics (p. 489);
    - their mother provided a rich linguistic environment for German via songs, stories and cassettes (p. 489) and in addition asked the older child to speak German to the younger child, which in the early years the child did (p. 492);

- the community language was not used by parents as their main language of communication;
- only positive attitudes from outsiders were encountered (p. 490).

To these, one can add three further factors:

- the childminders were native speakers of Spanish or German;
- holidays in Spain and Germany, the latter with peer contact;
- regular visits from Spanish and German relatives and friends.

One aspect which is not elaborated on in the study is the extent to which the children actually used their parents' languages. Hoffmann writes that by the end of the study the children were speaking English to each other but that "the other languages were maintained in 'family' conversations" (pp. 492–493). She also notes, however, that Pascual "normally use[d] English […] even to the parents" (p. 485).

Table 3.7: Hoffmann (1985)

Child	Cristina, Pascual
Age	Cristina: to 8;5, Pascual: to 5;6
Data	Notes, diary entries by both parents, recordings, (mainly vocabulary recall) tests (p. 481, no further details)
Languages of caregivers, institutions, community:	
Mother's language	German
Father's language	Spanish
Local language	English
Childminders' languages	Spanish (6 minders), German (2 minders)
School language	English
Siblings' languages	Mother asked Cristina to speak German to Pascual, which she did in the pre-school years; later children spoke English
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Much input in minority languages until start of pre-school, then more community language
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes
4 Variety of contacts in minority languages	Yes. Also peer exposure on holidays for German
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Yes
6 Caregivers use insisting strategies	Not mentioned
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism:	
Active trilingualism at end of study	Not clear; Cristina higher than younger brother who mainly used community language to parents
Child is dominant in community language	Yes

3.10 Kazzazi (2007, 2011)

Kazzazi has researched different aspects of her two children's language development: metalinguistic awareness (2007) and cross-linguistic influence (2011). The children, aged 11;7 and 5;2 at the end of the second study, were being raised with English (mother), Farsi (father) and German (community language). They were both highly dominant in German. This is the language they were most exposed to via full-time day care (the elder, Irman, from the

age of 3;1, the younger, Anusheh, from 1;2), and then via school. In addition, German was the language of communication between the parents. Further, Kazzazi herself is bilingual in English and German. The parents followed the one person, one language strategy "although not so strictly as to not react to utterances by Anusheh in […] German", but "efforts are made to induce her to speak English and Farsi" (Kazzazi 2007: 4). The children normally answered their parents in German.

Kazzazi writes that Irman is fluent in German and Farsi, has a passive knowledge of English, and can get by in that language if he has to. Anusheh "has made great efforts to use both Farsi and English" (2011: 69) since a visit to Iran at age 2;9. Nevertheless, most of her speech production is German. Kazzazi attributes her son's greater linguistic development in Farsi compared to English to "stronger input through regular longer visits to Iran and frequent contact with a social network of Iranian friends and family in Germany" (2011: 69). She notes that English input was limited to the mother and grandmother, and visits to England were not frequent. The evidence from Kazzazi's studies suggests that three related factors have been significant for the children's respective levels of trilingual development: in general, the very large amount of exposure to the community language and specifically, the fact that the community language was the parents' lingua franca, as well as the fact that the mother, besides being a native speaker of English, was also a native speaker of the community language.

Table 3.8: Kazzazi (2007, 2011)

Child	Irman, Anusheh
Age	Irman: to 11;7, Anusheh: to 5;2
Data	Notes, audiotapes, videotapes over 3 years 9 months for Anusheh, 10 years intermittently for Irman (further detail in 2011: 69)
Languages of caregivers, institutions, community:	
Mother's language	English (bilingual with German)
Father's language	Farsi
Local language	German
Day care language	German
School language	German
Siblings' language	German
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Much community language
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	No
4 Variety of contacts in minority languages	Farsi: Iranian friends in Germany, holidays in Iran; English: maternal grandmother in Germany
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	English videos mentioned
6 Caregivers use insisting strategies	To a certain extent (see 2007: 4)
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism:	
Active trilingualism at end of study	Mainly passive
Child is dominant in community language	Yes

3.11 Maneva (2004)

Maneva gives an overview of her daughter's multilingual language development from birth to five years, discussing sociocultural factors which appear to have been influential for her linguistic development (p. 110). The child, Daria, was growing up in bilingual Montreal, with a mother who spoke Bulgarian to her and a father who spoke Lebanese Arabic. The parents spoke Bulgarian together. Daria began French day care at 1;10; Maneva writes that for about a year and a half after this the child had relatively balanced input in Bulgarian, Arabic and French. From around the child's third birthday,

however, the father gradually started to relax the one person, one language rule and sometimes spoke French to the child. By circa 3;4–3;6 French had become Daria's dominant language. Her Arabic became passive, and she normally answered her father in French. At 3;11 Daria started bilingual French–English preschool, which gave her sustained input in English; at 4;10 she began schooling in French. By the end of the study (age five), Daria's languages were, in order of dominance: French (the language of school and the community), Bulgarian (her mother's and the home language), English (the other language of the community and one of her languages in preschool), and finally, Arabic (the language her father sometimes used with her). Maneva notes that at this age, it was not clear whether Daria really understood everything her father said to her in Arabic. However, she was still able to use Arabic with non-French speaking Arabic relatives on the phone.

One finding which is pertinent for the present study involves the importance of peer language input. Maneva distinguishes between both active and passive language exposure as well as non-egalitarian exposure (from adult to child) and egalitarian exposure (from child to child). In Daria's case, active, egalitarian exposure – i.e. the opportunity to play with peers – showed clear correlations with her language development. Between the ages of two and four, whenever Daria had the opportunity to play with Arabic- or Bulgarian speaking children, she "demonstrated a marked improvement in the language in which the exposure had occurred" (p. 114).

According to Maneva, the following factors are important in promoting child multilingualism (pp. 119–120):

- following the one person, one language strategy so that there is at least a minimum of input in the parental languages (note that this is something which Daria's father in fact abandoned);
- providing balanced language input if the goal is "advanced competence in all languages";
- a positive perception of multilingualism on the part of the community and the parents, which will in turn affect the child's own perception of multilingualism.

I would also like to add that it seems likely that Bulgarian was maintained not just because the mother, unlike the father, continued to follow the one person, one language strategy, but also because it was the language of communication between the parents.

Table 3.9: Maneva (2004)

Child	Daria
Age	To 5
Data	Audio and written recordings and observations over 5 years (p. 110, no further details)
Languages of caregivers, institutions, community:	
Mother's language	Bulgarian
Father's language	Lebanese Arabic
Local language	French and English
Daycare language	French (1;10–3;11)
Preschool language	French and English (3;11–4;6)
School language	French (4;10)
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes, until circa 3 years
2 Amount of input	Until circa 3 years similar proportions of Bulgarian, Lebanese Arabic and French. Then increase of French, decrease of Arabic
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes, Bulgarian is used
4 Variety of contacts in minority languages	Some; including some peer exposure
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Not mentioned
6 Caregivers use insisting strategies	Not mentioned
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism:	
Active trilingualism at end of study (here: quadrilingualism)	Actively trilingual, (mainly) passively quadrilingual; high in mother's language and two community languages; does not speak paternal language to father, but is "still" able to use it with relatives on telephone
Child is dominant in community language	Yes (French)

3.12 Mikès (1990)

Mikès examined the lexical development and differentiation of bi- and trilinguals in the town of Novi Sad, former Yugoslavia, where Serbocroatian was the dominant language. Three infants in her study (aged between 0:10 and 1:11) were growing up exposed to Hungarian (via their mother), Serbo-Croation (via their father), and German (via their grandmother, Mikès herself). Input from Serbocroatian and Hungarian – but not German – also came from other adults. Two of the children are also reported on in Mikès (1991). There is not a great deal of contextual detail in either study, and thus I limit my comments to the following two observations from Mikès (1990). Firstly, the three young children produced words in all three languages, as illustrated in the tables showing the children's doublets and triplets of the same word in two or three different languages (pp. 112–113). Further, Mikès makes an interesting observation in relation to exposure patterns. She describes how one of the children, Egon, lacked quite a few German lexical equivalents for words he had in his other two languages. Until 1;6, he saw his grandmother, his only source of German, for only a few hours a week. After this age, the grandmother looked after the child for four to five hours a day, four days a week. Mikès notes, with regard to the acquisition of these equivalents, that the child rapidly caught up and states that "[t]he impact of the changed microsociolinguistic environment was significant" (p. 113).

Table 3.10: Mikès (1990)

Child	Vuk, Uva (siblings), Egon (cousin)
Age	Between 0;10 and 1;11; ages at beginning of study not mentioned (p. 104)
Data	Audio recordings, daily diary records (1990: 105, a little more detail given)
Languages of caregivers, institutions, community:	
Mother's language (in both cases)	Hungarian (bilingual with Serbocroatian)
Father's language (in both cases)	Serbocroatian
Local language	Serbocroatian (some Hungarian)
Grandmother's languages	German (bilingual with Serbocroatian)
Siblings's languages	Not mentioned
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Most Serbocroatian, then Hungarian, least German (from Mikès 1991: 30)
3a Parents' languages are different from each other and from the community language	No
3b Local language is not main language of communication between parents	No (not explicitly stated but presumably Serbocroation, see p. 105)
4 Variety of contacts in minority languages	Not mentioned
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Not mentioned
6 Caregivers use insisting strategies	Not mentioned
7 Parent is the linguist-investigator	Grandmother is the linguist-investigator
Child's levels of trilingualism:	
Level of active trilingualism.	Not clear. Children can produce triplets in all 3 languages
Child is dominant in community language	Not mentioned

3.13 Montanari (2005, 2010)

Montanari investigates language differentiation in a young trilingual via a study of language choice. The study summarised here is Montanari's report of 2005, occasionally supplemented with information from her book of 2010. The issues and methods are quite close to those in the present study since Montanari looks at how language choice is influenced by the languages and discourse styles of the interlocutors, as well as by the child's proficiency (2005: 1662–1663). Her subject, Kathryn, was growing up in Los Angeles with her Filipino-American mother and Chilean-American father. The parents spoke to her in Tagalog (mother) and Spanish (father). The parents were also native

speakers of English, having moved to the United States at the ages of nine and twelve respectively (2010: 9). The child had considerable input in Tagalog since her Tagalog-speaking maternal grandparents minded her for three days a week during her first two years. The child's Spanish-speaking grandmother visited once a week and sometimes minded her on weekends. English input was regular since Kathryn's parents spoke English together, and her ten-year-old sister addressed her in English. After 2;2 English input was intensive since she began monolingual English day care three full days a week (2005: 1663).

The analysis is based on recordings from two two-week periods. In the first period, Kathryn's average age was 1;9.29; in the second period it was 2;4.19. Proficiency was calculated according to two measures. One was "word types": the percentage of different word types in each language over the total number of different word types in all languages. The second was the percentage of multiword (here including two-word) utterances in each language (2005: 1665). Averaging these two measures, Montanari concludes that Kathryn's languages in order of proficiency were Tagalog, followed by English, then Spanish in the first recording. In the second recording, English had replaced Tagalog as her most proficient language, while Spanish remained her weakest language (2005: 1667–1668).

With regard to language choice, Kathryn used Tagalog more than any other language with her mother in both recordings. However, only in the first recording did she use Tagalog more than 50% of the time. In both recordings with her Spanish-speaking father and grandmother, Kathryn used English more than any other language (followed by Spanish). To the English-speaking investigator (Montanari), Kathryn used English more than any other language (in both recordings over 50% of the time).

Thus, in the first recording, Tagalog was Kathryn's most proficient language and the one she preferred to speak with her mother. English was her next most proficient language and the one she preferred to speak with her Spanish-speaking father and grandmother and the English-speaking investigator. By the second recording, English had become her most proficient language. In this recording, the only main change in her language choice is

that, unlike in the first recording, she uses almost as much English as Tagalog with her mother.

What are the explanations for Kathryn's different levels of proficiency and her language choices, and to what extent does proficiency affect language choice? It is evident that her greater proficiency in Tagalog and in English compared to Spanish can be linked to exposure, as Montanari points out (2005: 1668). The language she was exposed to most at the time of the first recording was Tagalog, while by the time of the second recording this had changed to English. These changes are reflected in Kathryn's altered levels of relative proficiency in her three languages.

Proficiency also appears to account, to a certain extent, for language choice, the evidence being the following: in the first recording, the child used her most proficient language, Tagalog, more often with her Tagolog-speaking mother than she used her least proficient language, Spanish, with her Spanish-speaking interlocutors – despite the fact that the discourse styles of the caregivers were similar.

With regard to the adult discourse styles, all the interlocutors except the investigator accepted the child's utterances if they could understand them. Thus, the Spanish-speakers allowed a bilingual context, accepting the child's utterances in both Spanish and English, but not those in Tagalog, which they could not understand. The mother allowed a trilingual context, accepting utterances in all three languages. The message to the child was that she could use whatever language she preferred with her mother, and either Spanish or English with her father and paternal grandmother. As her linguistic competence in English surpassed that in Tagalog, she increasingly used English with her mother. And as her English was always more proficient than her Spanish, she used proportionally more English than Spanish when speaking to her father and grandmother.

Particularly interesting with regard to parental discourse styles is the Spanish-speaking interlocutors' strict adherence to Spanish (100% in the first session). This linguistic behaviour was not reflected in the child's language output

(2005: 1671). Recall that Döpke (1992) found that the one person, one language strategy alone was not enough for the maintenance of active bilingualism (see also section 2.9 of the present work). It is of note that Kathryn's older sister, also exposed to three languages, but of school age, was a passive rather than an active trilingual. This suggests that Kathryn may follow a similar path.

Table 3.11: Montanari (2005)

Child	Kathryn
Age	1st set of recordings, average age: 1;9.29 2nd set of recordings, average age: 2;4.19
Data	Audio recordings of 2 two-week periods taken from larger data base (precise details given p. 1663)
Languages of caregivers, institutions, community:	
Mother's language	Tagalog (bilingual with English)
Father's language	Spanish (bilingual with English)
Local language	English
Childminders' languages	Tagalog (grandparents, first two years)
Day care language	English (from 2;2)
Siblings' language	English
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Much input in maternal language till 2;2 then much input in community language
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	No, English is used
4 Variety of contacts in minority languages	Grandparents
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Not mentioned
6 Caregivers use insisting strategies	No (only investigator)
7 Parent is the linguist-investigator	No
Child's levels of trilingualism:	
Active trilingualism at end of study	Some; produces parental languages with parents but less often than 50% of the time
Child is dominant in community language	Yes

3.14 Quay (2001)

This study is the first methodologically rigorous published case study of trilingual language acquisition and may be considered a benchmark. Quay investigated the language development of a young boy, Freddy, exposed to three languages from the ages of 0;11 to 1;10. Her goal was to examine "systematically and more comprehensively than has previously been done the relationship between language exposure in context and an infant's demonstrated language capacities" (p. 160). The child was exposed to English from his mother, German from his father, and Japanese via day care (six hours a day on weekdays) from the age of 11 months. Quay investigated three main language exposure factors: 1) input delay, that is, the relationship between earlier versus later exposure to language; 2) quality of input, meaning parental discourse styles; and 3) quantity of input (p. 160). Clear findings were that the input delay of almost one year for Japanese played no role in the child's language choice. Japanese was, from the onset of speech, his preferred language with both parents (see figures 3 and 4, pp. 173–174). Nor did later exposure to Japanese play a role in Freddy's production capacities in that language: no developmental delay could be observed in the video recordings (p. 195). The relationship between the quality of input, that is the parental discourse styles, and the child's language choices was also evident: even though the parents primarily spoke English and German respectively to their son, they implicitly allowed the use of Japanese by not insisting that the child use their own languages. In addition, both parents sometimes code-switched into Japanese (pp. 194–195).

With regard to the third point of investigation, quantity of input, the findings offer a clear picture for Freddy's use of German but not his use of Japanese and English. Until entry into day care, the child heard approximately 70% English and 30% German. After starting day care, he continued to hear more English than any other language, followed by Japanese, then German. Only in the last four months of the study were the proportions of exposure to English and Japanese equal: 45% each. In this period, Freddy only heard 10% German, and his own production of German decreased considerably. Despite this overall greater amount of exposure to English, Freddy, according to the video recordings, preferred to use Japanese with both his parents throughout. Yet

while his preferred language was Japanese, the child, according to the different types of parental report, could actually understand and produce more different words in English. Quay does mention the problems of parental reports (p. 168). However, if we assume the reports to be accurate, this would mean that a young child's greater proficiency does not necessarily influence language choice. Quay offers an explanation of Freddy's language choice based on pragmatic factors. She proposes that Freddy chose Japanese because it was "the language that work[ed] in the most cases […] in the daycare and at the playground with monolingual Japanese adults and children as well as in the home with his trilingual parents" (p. 194). Further, in Quay (2011b: 33–34), in which interactions at Freddy's (and Xiaoxiao's, see below) day care are analysed, she notes how interaction in Japanese is supported by the day care workers via their frequent uses of onomatopoeia, as well as much gesture-supported input (e.g. arm gestures and hand clapping). These gestures were also made much use of by the children; Freddy could "communicate many messages with his limited Japanese", for example by uttering the equivalent of 'this' in Japanese plus pointing to an object (Quay 2011b: 38).

Table 3.12: Quay (2001)

Child	Freddy
Age	0;11 – 1;10
Data	Questionnaire, interviews, development inventory, diaries, video recordings (precise details given pp. 164–167)
Languages of caregivers, institutions, community:	
Mother's language	English
Father's language	German
Local language	Japanese
Day care language	Japanese
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	At first, most maternal language, then equal maternal and community language; least paternal language
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes, German mainly used
4 Variety of contacts in minority languages	Some for English
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Not mentioned
6 Caregivers use insisting strategies	Not greatly
7 Parent is the linguist-investigator	No
Child's levels of trilingualism:	
Active trilingualism at end of study	Mainly passive (actively bilingual)
Child is dominant in community language	Community language is his preferred language but some evidence suggests greater proficiency in maternal language

3.15 Quay (2008)

In this study, Quay examined the language choices of another trilingual family in videorecorded sessions at dinner times. The first recording was made when the child was 1;10.17, the final one when she was 2;4.18. The family consisted of Xiaoxiao, the daughter, who was born and raised in Japan, her Chinese mother and her American father. Her mother spoke to her in Mandarin, her father in English. Her mother was also fluent in English and Japanese, and her father in Japanese (with some knowledge of Chinese). The parents estimated that during her first months, the child's language input was 85% Chinese and 15% English. Once she started day care, at the age of five

months, her parents estimated that her input was 40% each for Japanese and Chinese, and 20% for English.

Quay provides precise figures on how much of each language each family member used during the recorded sessions (p. 17). Both parents basically followed the one person, one language strategy with their daughter. To each other, they generally spoke English. The child used more Chinese with her mother than any other language and more English with her father than any other language. In neither case, however, did she use her parents' language more than 50% of the time. An intriguing finding is her language choice for both parents: in 67% of utterances addressed to both parents, Xiaoxiao used Japanese.

How can we account for the child's preference for Japanese? It cannot be related to quantity of input alone, since, according to the parental estimates, input was equal for Japanese and Chinese. Quay proposes that peer socialization, as compared to parental socialization, has a strong influence on language use (p. 19). Recall that Maneva (2004) came to a similar conclusion when observing the influence of Arabic- and Bulgarian-speaking playmates on her subject's language development. In addition, Quay points out that Xiaoxiao (like Freddy in Quay 2001) must have realised that more people in her environment speak Japanese than either of her parents' languages. Further, the fact that both parents are fluent speakers of Japanese is surely significant: Quay suggests that in the girl's eyes, Japanese may have attained the status of a lingua franca for her communication with both parents (p. 20). Finally, Quay proposes that the fact that the parents accepted Xiaoxiao's utterances in any language played a role, that is, their parental discourse styles allowed Xiaoxiao to develop her preference for Japanese.

One further finding in this study is of particular interest for the question of active trilingualism. Xiaoxiao, according to her parents' estimates, was exposed to English maximally 20% of the time. And yet she managed to produce more English with her father than any other language. Thus, Quay notes that "one-fifth of her total input" was enough "for the development and maintenance of her English skills" (p. 30). This fact is all the more surprising

since the father did not insist on the child using English. Quay suggests that the close bond the father and daughter shared may have played a role, as well as the personality of the child, whom Quay describes as accommodating and sociable (p. 30). I would like to add that the fact that English was the main language of communication between the parents is probably also significant; possibly, the parental estimates only concerned what languages were spoken to the child and not what she also overheard.

Table 3.13: Quay (2008)

Child	Xiaoxiao
Age	1;10.17–2;4.18
Data	Video recordings (precise details given p. 13)
Languages of caregivers, institutions, community:	
Mother's language	Chinese
Father's language	English
Local language	Japanese
Day care language	Japanese from 0;5
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Till 0;5 most input in maternal language, then equal for maternal and community language; least input in paternal language
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes, English is used
4 Variety of contacts in minority languages	Not mentioned
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Not mentioned
6 Caregivers use insisting strategies	No
7 Parent is the linguist-investigator	No
Child's levels of trilingualism:	
Level of active trilingualism at end of study	Some; produces parental languages with parents but less often than 50% of the time
Child is dominant in community language	Yes

3.16 Stavans and Swisher (2006)

The authors of this study report on the code-switching of two siblings exposed to Hebrew (mother), Spanish (father) and English (community language). These are the same children reported on in Stavans (1992, 2001) and Hoffman and Stavans (2007). The parents adhered to the one person, one language strategy, and used Spanish between themselves. Both children became dominant in the community language. Stavans and Swisher state that although the parents adhered to the one person, one language principle, "[f]or the most part, the children responded in English" (p. 204). They further note that while the "older child occasionally carried on conversations with his

parents that were predominantly in Hebrew or Spanish, the younger child rarely produced a whole response in those languages" (pp. 209–210). Nevertheless, both children were able to communicate in Spanish with a monolingual childminder in Mexico (p. 205). Two reasons seem to be significant with regard to the children's levels of trilingualism. The first is the parents' competence in all the three languages, and – we may assume, although this is not stated explicitly – their acceptance of all languages. Stavans and Swisher note that "because both parents were trilingual, the children knew that they could switch in any direction and still be understood" (p. 204). One may deduce from this statement that the switches were also accepted by the parents. The second factor is the importance of the community language, and Stavans and Swisher comment:

> Hoffmann [1985] reports that once her children started school, English very quickly became their strongest language. This was also true in the present study, leading to the apparently counterintuitive result that the children become dominant in a language for which they had no parental input. (p. 205)

In both of these studies, we see the dominance of the community language, even when it is not present to any great extent in the home.

Table 3.14: Stavans and Swisher (2006)

Child	E and M
Age:	E: 5;5–7;1, M: 2;6–4;2
Data	Audio recordings (precise details given p. 204)
Languages of caregivers, institutions, community:	
Mother's language	Hebrew
Father's language	Spanish
Local language	English
Childminders' languages	English and Spanish
Daycare language	Not mentioned, "private Jewish daycare"
School language	English, occasional Hebrew
Siblings' language	Older child occasionally used Hebrew with younger; otherwise presumably English
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	Local language dominates upon school entry
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	Yes (Spanish, occasionally Yiddish)
4 Variety of contacts in minority languages	Not mentioned
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Not mentioned
6 Caregivers use insisting strategies	Not mentioned but it seems not
7 Parent is the linguist-investigator	Not mentioned
Child's levels of trilingualism:	
Active trilingualism at end of study	E: some; produces parental languages with parents but less often than 50% of the time M: mainly passive
Child is dominant in community language	Yes

3.17 Wang (2008)

This work is a guidebook for parents. The author documents how she and her husband raised their two sons, Léandre and Dominique, trilingually from birth till age eleven, and uses her experience to offer advice to parents who are considering raising their own children multilingually. The family lived in the United States. The mother spoke Chinese to the children and the father French. The parents spoke English to each other. English had a prominent

place in the children's lives since not only was it one of the home languages but also the children's day care and school language. Further, the children did not have regular contact with other speakers of Chinese or French (Wang speaks of herself and her husband as being "alone on the linguistic planet" p. 69). The children nevertheless became actively trilingual, and normally addressed their parents in their parents' respective languages. Throughout the guidebook, Wang describes the strategies she and her husband used to foster active trilingualism. I list these in point form below.

- *Consistency in following one person, one language*. The parents adhered strictly to the one person, one language principle (p. 100).
- *Sufficient quantity*. Wang and her husband exposed their children to as much of the parental languages as possible. They chose to be the primary caregivers equally until Léandre was four, and Dominique three (pp. 87, 100). Wang also stresses the importance providing sufficient input by creating opportunities to talk to children, especially as they get older (pp. 166–167).
- *Variety of activities and media*. The children were engaged in varied activities in the minority languages, such as book reading, personal story telling, pretend play, etc. (p. 100). The parents also found a monitored use of television, video, and interactive CDs helpful (pp. 119–120, 133).
- *Parental discourse strategies*. The parents insisted that the children speak the parental languages (pp. 109–111).
- *Active teaching of parental languages*. Difficult language features were taught to the children (pp. 100–101). The parents also helped the children describe their school experiences in the home languages by providing them with the necessary vocabulary (pp. 113–114, 133).
- *Promotion of culture*. Visits were made to both China and French-speaking Switzerland; in addition, the children were engaged in heritage activities such as celebrating traditional heritage holidays (pp. 121–222, 133).
- *Teaching literacy skills*. The parents fostered literacy skills in the minority languages (pp. 115–119, 133), and tried to motivate their children to read in these languages by providing interesting material

(p. 119, 133), as well as material directly related to their interests (p. 168).

A further interesting feature of these children's language development is the siblings' language of communication, namely French. Wang surmises that the following reasons played a role in the children using their father's language as their language of communication (pp. 62–63):

- the longer amount of quality time that they spent with their father compared to their mother, and the engaging activities they were involved in (see discussion in section 2.1 of fathers' child-centred styles compared to mothers' styles in the summary of Döpke 1992);
- the talkativeness of the father;
- same-gender connectedness between father and children;
- positive experience in French: the children were often admired by outsiders for being able to speak French, but not for being able to speak Chinese;
- older sibling influence – Léandre chose to speak French with his younger brother, and this pattern remained.

It is of particular note that the children kept French as their language of communication throughout their primary school years; at the end of the study, this was still the case.

In summary, the high levels of active trilingualism of these two children seem to be relatable to three main factors: the large amount of input in the minority languages, the parents' continual efforts to motivate the children to use the minority languages by providing diverse and interesting material and activities in these languages, and their insistence that the children use their parents' languages.

To conclude, one may note that the parental effort reported on in this study is enormous. These parents made raising their children trilingually a major project in their lives, and made many sacrifices to this end. In order to provide as much home language input as possible, Wang points out that she and her husband had to "sacrifice their personal enjoyment to a large extent" (p. 46),

that is, curtail social and cultural events not involving the children. They also had to slow down their own professional work. (She notes that it took her husband eleven years to finish his doctorate, p. 46.) In this context, it should also be pointed out that, as academics, they were actually able to do this, since they had flexible schedules.

Table 3.15: Wang (2008)

Children	Léandre, Dominique
Age	0–11 for both
Data	Audio and video recordings, notes (further details given on collection, p. 6)
Languages of caregivers, institutions, community:	
Mother's language	Chinese
Father's language	French
Local language	English
Childminders' languages	English (only a few hours a week)
Day care language	English (Léandre at 4, Dom. at 3)
School language	English
Siblings' language	French
Further contextual factors:	
1 Caregivers follow 1P/1L	Yes
2 Amount of input	In early years considerable input in minority languages; increasing importance of community language upon day care entry
3a Parents' languages are different from each other and from the community language	Yes
3b Local language is not main language of communication between parents	No, English is used
4 Variety of contacts in minority languages	Little
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)	Yes
6 Caregivers use insisting strategies	Yes
7 Parent is the linguist-investigator	Yes
Child's levels of trilingualism:	
Active trilingualism at end of study	High
Child is dominant in community language	Yes

3.18 Conclusion

As stated at the outset of this chapter, the studies described above comprise most published trilingual language acquisition research at the time of writing. To my knowledge, only the following studies have not been discussed. First, I have not discussed all the different investigations which are concerned with the same child. For example, I focused on Montanari's study of Kathryn's language choice (2005), rather than her study of the child's phonological differentiation (2011). Second – apart from the four exceptions mentioned in the introduction – I have not considered any work which does not base its findings on actual speech data. Thus, articles dealing exclusively with theoretical issues connected with trilingualism, such as Hoffmann's (2001) discussion of trilingual competence or Grosjean's (2001) model of the trilingual language mode have been left out of this overview; concepts developed in such works are referred to when appropriate. Further, within this category of speech data-based studies, I have not discussed trilingualism research which does not provide enough of the type of contextual detail relevant for the present investigation, e.g. Edwards and Dewaele (2007), which looks at code-switching patterns between a mother and daughter in trilingual conversations. Finally, I have not, of course, been able to discuss studies which are unavailable to me, such as the doctoral dissertations by Navracsis (1999, mentioned in Quay 2001: 153) or Sakamoto (2000, mentioned in Wang 2008: 54).

We have seen that the studies described examine children of different ages, use different methodologies, and report on different aspects of trilingual language acquisition. For this reason, I found it important to take a holistic approach, and examine each study separately, in order to better understand the interaction of factors in each individual case. In the following, I return to the contextual factors identified in chapter two (incorporating the slight adaptations described in the introduction to this chapter), and attempt to relate these to the levels of active trilingualism of the children in the studies just described. Recall that the focus is on the extent to which the children produce the three languages and not on levels of proficiency. Note that the family comparisons concern the families described in fifteen of the seventeen of the studies, i.e. all but the survey-style studies of Braun and Cline (2010)

and De Houwer (2004). An overview of the information given in the tables for each of these fifteen studies is given in a single table (3.16) at the end of the chapter.

1 Consistency in following the one person, one language strategy

Families in twelve of the fifteen studies followed the one person, one language strategy, although how consistently is not always mentioned. In three of the twelve families, some of the children were not actively trilingual. In Kazzazi's family, the children did not usually speak their parental languages to their parents (2007, 2011). Recall that in this family, the community language was accorded a great deal of linguistic space and importance in the lives of the children, and that one of the parents was also bilingual in the community language (Braun and Cline's Type II family). The child in Quay (2001) and the youngest child in Stavans and Swisher (2006) were also mainly passive trilinguals. In the first family, we know that the parents did not use insisting strategies, and in the second family, we can surmise that they did not. In Quay (2001), further, the input for one of the parental languages was only 10% of the total language input in the last four months of the study.

Of the other nine studies in which parents followed the one person, one language strategy, in four the children had high levels of active trilingualism (Barnes 2006, Cruz-Ferreira 2006, Dewaele 2007 and Wang 2008). In another three, there was some active trilingualism (Montanari 2005, Quay 2008), while in the remaining three studies, the level was not clear (Barron-Hauwaert 2000, Hoffmann 1985, and Mikès 1990).

In the three families in which the one person, one language strategy was not followed throughout the entire period of the study, the effects on the linguistic development on the children could be seen clearly. The parents in Faingold (1999) and the father in Maneva (2004) shifted fully or partially to using the community language with their children. This resulted in a considerable diminishment in the children's ability to use the parental languages concerned. By contrast, in the family who chose to use one parental language between themselves and with their children (French in Helot 1988),

the children successfully maintained this language (as well as the other two languages, for different reasons). Thus, it appears that it is reducing space for the community language rather than following the one person, one language strategy per se which is significant. When families do not follow the one person, one language strategy in favour of the community language, chances for the child's active trilingualism are virtually non-existent. However, when they do not follow the one person, one language strategy in order to promote a minority language, this may (depending on the circumstances for the other two languages) even foster trilingualism.

2 Amount of input

The amount of input needed in each language for there to be a chance of active trilingualism remains a difficult question to answer, although it is undisputed that "adequate" input must be given (Quay 2001: 196). The clearest finding is that of Quay (2008), who revealed that one-fifth of the total language input was enough for the subject, Xiaoxiao, to maintain production skills in her paternal language, English, despite the fact that her father did not insist that she use the language. Yet in the family of Kazzazi (2007, 2011), which followed the one person, one language strategy, Anusheh produced little of either of the parental languages. The studies by Kazzazi make clear that a high proportion of input in the community language creates quite a hurdle when it comes to fostering the other languages. It is significant that in three of the families in which the children had high levels of active trilingualism, we learn that the parents took specific steps to try and provide greater input in the minority languages than the children would have otherwise received. For example, Barnes (2006: 91) and her husband changed from using one of the community languages, Spanish, to the minority language, English, as their couple language. This was also one of a number of steps that Cruz-Ferreira and her husband undertook (2006: 30, 34). While Wang (2008) and her husband could not follow this particular path since they could not speak each other's languages fluently, she and her husband achieved their goal of providing a lot of input in the parental languages by both staying at home part-time with their children in the early years. Thus, the question of balance of input appears to be salient. This question will be explored in the two case studies presented in this book.

3 Language constellations

3a Parents' languages are different from each other and from the community language

As stated above, Braun and Cline (2010) found that within mainly monolingual societies, parents who each spoke one different native language which was not the community language were considerably more successful in raising children trilingually than those where one or more parent had the community language as a native language. We see that this was the case for three of the families in which the children displayed high levels of active trilingualism (Cruz-Ferreira 2006,[16] Dewaele 2007 and Wang 2008). (In the other families, Helot 1988, Maneva 2004 and Barnes 2006, the community was already bilingual.) In Barron-Hauwert's survey, the families all appeared to have this language constellation ("parents who speak two different languages and live in a third language country", 2000: 1), and most of the children were said to be actively trilingual.

However, this finding does not match the situation described in Faingold (1999), Quay (2001) and Stavans and Swisher (2006). These families also had this particular language constellation but had children with low levels of active trilingualism. In the former, as was described above, the one person, one language strategy was not followed, while in the latter two the parents did not (or apparently did not) insist on the children speaking the parental languages.

3b Local language is not main language of communication between parents

De Houwer (2004) found that passive trilingualism was clearly linked with the presence of the community language in the home. In two cases in the present study, the community language had an important place in the home since it was also the language of communication between the parents: Kazzazi (2007, 2011) and Wang (2008). In the first family, the children indeed had low levels of active trilingualism. However, in the second, the children displayed high levels of active trilingualism. The huge efforts of Wang to raise trilingual children have been described. It should further be recalled that in Kazzazi's

[16] For the children in Cruz-Ferreira (2006), the world of English language international schooling in Hong Kong and Singapore can be compared to "a mainly monolingual society" Braun and Cline (2010).

family the community language was one of the mother's native languages, while in Wang's family, this was not the case.

4 Variety of contacts

The importance of a variety of contacts is emphasised in a number of the studies. In Hoffmann (1985), the sustained contact with friends, relatives and childminders who were native speakers of the minority languages no doubt played a role in the children's active trilingualism in their pre-school years. Both Dewaele (2000, 2007) and Maneva (2004) observe the rapid improvement in the production of the child's minority languages following contact with peers who are native speakers. Faingold (1999) ascribes a lack of peers who speak the minority languages as one reason for his son's lack of active trilingualism. Yet in the study by Wang (2008), in which the children display high levels of active trilingualism, the author notes they did not have much contact with different speakers of the minority language(s) on a regular basis. The compensatory measures the parents undertook have been described above.

5 Variety of media (and stimulating linguistic environment in general)

Both Hoffmann (1985) and Wang (2008) note that they tried to provide a rich linguistic environment for their children by using a variety of media with them; otherwise there is little information on this component. If we concentrate on the notion of a rich linguistic environment in general, however, we find four further studies (Barnes 2006, Cruz-Ferreira 2006, Dewaele 2007, Helot 1988) in which this aspect is either explicitly mentioned or else there is evidence of it. For example, in Helot's study the children were taught to read in the minority language before starting school. Of course, that this aspect is not mentioned in the other studies does not mean that such an environment was not present in those families. We may simply note that in most of the families with children with high levels of active trilingualism, the creation of a stimulating linguistic environment was either explicitly stated or could be observed.

6 Parental discourse styles (in particular insisting strategies)

In the fifteen studies listed in table 3.16, the use of insisting strategies can be seen to be a salient element in active trilingualism. In just four of the studies (Barnes, Cruz-Ferreira, Dewaele and Wang) do we know that the parents used insisting strategies for the minority languages. And in precisely these families the children also use the parental languages with their parents most of the time. Conversely, in studies in which parents both follow the one person, one language strategy, and do not speak the community language to each other (two factors which, all other things being equal, would seem to favour multilingual development) but do *not* use insisting strategies, the children were either actively trilingual but did not use their parents' languages with their parents to such a high extent (Quay 2008, the first child in Stavans and Swisher 2006) or were mainly passive trilinguals (Quay 2001, the second child in Stavans and Swisher 2006).[17]

Concerning another aspect of parental interactional styles, both Cruz-Ferreira (2006) and Wang (2008) stress that the intenseness of the interactions between the fathers and their children was a positive element in the fostering of the paternal language.

7 Parent is linguist-investigator

The evidence from the studies makes it difficult to judge the importance of this variable. On the one hand, in five of the six studies in which the children had high levels of active trilingualism, one of the parents was the linguist-investigator (Barnes, Cruz-Ferreira, Dewaele, Maneva and Wang). On the other hand, in families where the children displayed lower levels of active trilingualism, we also find parents who were linguist-investigators. What is clear in the case of Barnes, Cruz-Ferreira and Wang is that they certainly had a strong "impact belief" (De Houwer 2009: 96). They manipulated the quantity of input in the minority languages by taking steps to provide as much of it as possible, as well as monitoring the quality of the input, for example via the use of insisting strategies.

[17] Only studies for which information for each of these categories was available could be discussed.

8 Status of the languages involved

Finally, we can note that there is a further factor which is not salient in the bilingualism studies, but which several trilingualism studies mention, namely, the status of the languages involved. Barron-Hauwert (2000: 3) suggests that languages with a high world status tend to be maintained. Helot (1988: 285) observes that the prestige of French and Irish in Ireland was a relevant factor in the promotion of these two languages. Wang (2008: 63) also describes the prestige of French over Chinese in the United States as being influential in fostering the paternal language. Further, the prestige of French is implicit in the interview given by the daughter of Dewaele. Finally, Faingold (1999: 287) comments that the low status of one of the parental languages in the community in which they lived (Spanish in a Los Angeles suburb) was one likely reason for his son refusing to speak it.

To conclude, this survey of trilingual language acquisition studies has shed some light on the correlations between the context in which a child acquires their three languages and their levels of trilingual development. It has indicated that a number of factors are salient, such as the absence of the community language in the home. The aim of the following investigation is to examine these contextual factors in case studies devoted specifically to the question of what fosters active trilingualism.

Table 3.16: Overview of trilingual language acquisition studies

	Barnes	B.-H.	C.-F.	Dew-aele	Fain-gold	Helot	Hoff-mann	Kazz-azi	Man-eva	Mikès	Mont-anari	Quay 2001	Quay 2008	St. & Sw.	Wang
1	yes	yes	yes	yes	till 3;6	no	yes	yes	till 3;0	yes	yes	yes	yes	yes	yes
2	till 2;5	?	no	no	yes	no	no	no	till 3;4	no	no	no	no	no	no
3a	no	yes	yes	yes	yes	yes[18]	yes	yes	yes	no	yes	yes	yes	yes	yes
3b	yes	9/10	yes	yes	yes	yes	yes	no	yes	?	no	yes	yes	yes	no
4	yes	?	yes	yes	no	yes	yes	yes	some	?	?	some	?	?	no
5	yes	?	yes	yes	?	yes	yes	?	?	?	?	?	?	?	yes
6	yes	no	yes	some	no	?	?	some	?	?	no	no	no	?	yes
7	yes	no	yes	yes	yes	no	yes	yes	yes	GM	no	no	no	?	yes
high	X	?	X	X		X			X[19]	?					X
some							? Cris.				X		X	E	
low					X		? Pasc.	X				X		M	

Key:
1 Caregivers follow 1P/1L
2 Amount of input: similar proportions of input
3a Parents' languages are different from each other and from the community language
3b Local language is not main language of communication between parents
4 Variety of contacts in minority languages
5 Stimulating linguistic environment (e.g. reading aloud, songs, variety of media)
6 Caregivers use insisting strategies
7 Parent is the linguist-investigator
GM grandmother
high/some/low: high/some/low active trilingualism

[18] Different from majority community language.
[19] Daria spoke her mother's language and two community languages (active trilingual), but had more or less a passive knowledge of her father's language (passive quadrilingual).

4
Data Collection, Transcription and Language Coding

4.0 Introduction

As with most of the studies described in the previous two chapters, the present investigation relies on the method of the case study. While extremely useful findings are to be gained from wide-scale surveys such as that of De Houwer (2004), the question of what influences active trilingualism also requires detailed analyses of speech data in context. Both types of investigation complement each other and bring us closer to an understanding of the forces which shape multilingual language acquisition. The present study offers an in-depth account of trilingual input in two familes and their children's levels of trilingualism.

4.1 Data collection

The first stage in data collection consisted of conducting interviews with multilingual families in Switzerland, where the author is based. The purpose of the interviews was twofold. First, the aim was to gather background information on trilingual families, in particular parents' feelings about and experiences in raising children trilingually. Second, the interviews were a means to find appropriate candidates for the case studies. The informants were found mostly via an article I wrote for the Swiss expat parenting magazine, the *New Stork Times* (Chevalier 2006: 12–13), plus an advertisement placed there. A few were also found through personal connections, especially through university colleagues and students. Due to this method of data collection, the parents interviewed tended to be middle class, with at least one parent if not both working professionally. This was the case for the two families who later took part in the case studies. All in all, 34 interviews were conducted, 33 in Switzerland and one in southern Germany. Note that while the information from the interviews informs this research to a certain extent (see chapters one and eight), it is not analysed in depth and will be the subject of a future study. The focus here is on the case studies.

My aim was to conduct more than one case study in order to try and gain a more comprehensive picture of trilingual language acquisition. In the end,

two interested families were deemed suitable for participation. The criteria were that the children were healthy, were aged circa 2;0 at the beginning of the study, and that the languages involved were ones the investigator was fluent in. The latter two criteria taken together eliminated most of the other families interviewed as possible candidates. The reason for taking the age of two for the beginning of the case study was that children of this age are still in a relatively early period of their language development but have nevertheless acquired enough language for their utterances to be mostly comprehensible. Montanari further argues that an analysis of language choice only makes sense once children have acquired 100 words and thus "have sufficient lexical resources from which to choose" (2010: 101–2 paraphrasing Deuchar and Quay 2000). The second criterion, that the investigator be fluent in the languages involved, "may seem obvious" (De Houwer 2009: 56) but is worth pointing out nevertheless. This methodological aspect is in fact not always mentioned (and possibly not always considered) in all trilingual language acquisition studies. The languages in both case studies are English, French and Swiss German. The first is the native language of the researcher, the second two are languages which were later acquired.

The parents in both families follow the one person, one language strategy, each speaking their native language to their child(ren). The first family which took part in the study lives in German-speaking Switzerland. In this family, the target child, Lina,[20] is growing up with a Swiss mother who speaks a Bernese variety of Swiss German to her, a Belgian father who speaks French to her (he himself is bilingual in French and Dutch), and an American aunt who visits approximately twice a week and speaks English to her. In addition, the parents speak English to each other. The mother's English is clearly Swiss German-influenced, the father speaks a variety of southern British English with a slight non-native accent. The second family lives in French-speaking Switzerland. The target child, Elliot, has a German Swiss father who speaks a Basel dialect,[21] and an English mother (who grew up in South Africa); he has attended French language day care since the age of seven months. Elliot also has an older brother who attends the bilingual stream in his school (French

[20] All names used in the study, including those of pets, are pseudonyms.
[21] The father's variety also contains elements from dialects of other regions where he has worked, namely Aargau, St Gallen, Schwyz and Zurich.

and English). Precise details on the extent to which the one person, one language strategy is followed, as well as further details on language input, are given in chapter six. An overview of the language constellation in the two families can be seen in tables 4.1 and 4.2.

Table 4.1: Language exposure patterns, Lina's family

Source of exposure	Language
Mother → Child	Swiss German
Father → Child	French
Mother ←→ Father	English
Local language	Swiss German
Childcare (two half-days)	Swiss German
Aunt	English

Table 4.2: Language exposure patterns, Elliot's family

Source of exposure	Language
Mother → Child	English
Father → Child	Swiss German
Mother ←→ Father	English
Local language	French
Childcare (three full days)	French

The parents, none of whom were previously known to me, kindly agreed to record their children regularly once a month for a year, from just after the children's second to just after their third birthday. The longitudinal design of the study was considered essential for the investigation of the development of their three languages. In addition, since I remained in regular contact with the families after the recordings were made, I was also able to ask them if they could make any further sets of recordings. Both families made a set once again a year later, just after the children's fourth birthday. Lina's family also made one in between, when Lina was three and a half. It should be pointed out that, unless otherwise stated, results and analyses only refer to the original or "main" data set of the first year of the study.

The parents were asked to make half-hour recordings of their usual interactions with their child. Everyday interactions were considered the best way to obtain natural child–caregiver interaction – the main setting in which

Western children actually learn language.[22] The recordings thus consist of various activities: playing, book-reading, mealtimes, getting ready for bed routines, and so on. The type of activity in each recording is listed in Appendix 2 and is taken into consideration in the analysis. Although no instructions were given in terms of activities, the parents were asked to make recordings of four different constellations: child + mother, child + father, child + both parents, child + person providing 3rd language (parents not present). In Lina's case, this was her American aunt, in Elliot's a French-speaking babysitter. Analyses of separate interactions according to each different interlocutor were considered essential in order to examine the effect of caregiver discourse styles on the children's language use. For the sake of comparability, the recordings were to be made as close to each other as possible, preferably within a few days of each other (see e.g. Lanza 2004: 95).

The recordings were made on a small, professional digital recorder (M-Audio Micro-Track 2496), which was placed somewhere unobtrusive. The parents were asked to record without the child realising, if possible. The decision to use a small audio-recorder, as opposed to a video-recorder, was made for the sake of unobtrusiveness. It should be mentioned, however, that one disadvantage with this method is the analysis of triadic conversations – without eye gaze, one cannot always know who is addressing whom. It was hoped that the children would not notice the recorder and thus the Observer's Paradox[23] would be circumvented. In several recordings, however, it becomes clear that the recording device has in fact caught the children's attention. This happened with Lina in interaction with her aunt (in recordings II, III and X), and with Elliot in interaction with his father (in recording I). Lina states each time that the object is her father's (her father was the one responsible for transferring the data onto the computer) and her aunt simply agrees and

[22] This is apparently not a universal in child language acquisition. Ochs and Schieffelin (1995: 78) report on two communities, traditional Western Samoan communities and the Kaluli of Papua New Guinea, where infants and small children are not considered conversational partners, and are not usually addressed specifically; rather, young children acquire language by overhearing conversations of older people.

[23] Introduced by Labov, the Observer's Paradox states that "the aim of linguistic research in the community must be to find out how people talk when they are not being systematically observed; yet we can only obtain this data by systematic observation" (1970: 32 cited in Chambers 2003: 20).

changes the subject. Twice Lina accepts this response but once she insists on actually taking the machine to her father, which results in a short triadic exchange. When Elliot notices the device, his father states that it is a microphone, and that it should just sit there, without explaining what it is. Elliot accepts this and does not pursue the matter. Thus, both the adults play down the event. Considering the young age of the children, the fact that they were not doing anything out of their normal routine, and the fact that nothing was said about the recordings to the children leads me to assume that the recorder, even when noticed, did not affect their behaviour much. The adults knew, of course, that they themselves were being recorded. However, as the study's focus is that of *child* language acquisition, and was introduced as such, one may assume that they did not monitor their own speech particularly.

Permission to use the recordings in an anonymised form for research was given by the parents, and accordingly a permission form was signed by both the researcher and the parents. This form is based on the consent form reproduced in Lanza (2004: 357), with only contextual details changed.

In addition to the recordings, regular observational visits to the two families were made. These were undertaken for three main reasons. Firstly, during the visits I was able to ask the parents for details concerning both language input and language development. I asked the parents to describe to me how, and how much, the child was exposed to each language, and to note down and inform me of any changes during the period of the study. The parents were also asked to judge the order of dominance of the children's languages, and to give me any other details they thought relevant to their child's trilingual development. The second reason for the visits was for me to learn more about the children's surroundings, books and toys in order to understand the recordings better. And, finally, the third reason was to observe the children directly. These visits were thus undertaken to ensure a better overall understanding of the relationship between contextual factors and the children's language development. The minimum time spent was one and a half hours, although usually the visits were longer. The visits are listed in tables 4.3 and 4.4, below. It can be seen that Lina's family was visited more

often than Elliot's, a situation which occurred for practical reasons: Lina's home was a two-hour journey away, while Elliot's was a four-hour one, and Lina's parents were at home more than Elliot's, and were thus more easily available.

Table 4.3: Visits to Lina's family

Age of Lina	Family members present
2;00.12	mother, father
2;01.23	mother, father
2;03.17	mother, father
2:06.16	mother, father, aunt
2;08.15	mother
3;01.12	mother

Table 4.4: Visits to Elliot's family

Age of Elliot	Family members present
2;00.09	mother, father, brother
2;04.03	mother, brother
2;09.11	mother, brother

What are the advantages and disadvantages of such a research design? The main advantage is the high degree of naturalness of the situation. The children and their caregivers are following their usual routines without the presence of the investigator. The speech data, we may assume, truly comprises a realistic slice of how these children and their caregivers interact. The disadvantage of having non-professionals do the recordings is that not all recordings are made, and those that are, are not always made according to schedule. In Elliot's family some recordings for certain months or for certain caregivers are missing, due to initial difficulties with recording. Further, in both families, it was found very difficult to always make all four recordings within a few days of each other, especially since a third person outside the immediate family was involved. Tables 4.5 and 4.6, below, show all the recordings made. The shaded cells indicate those recordings which were transcribed; the choice of recordings for transcription is discussed further on.

Table 4.5: Recordings and transcriptions, Lina

Set	Mother	Father	Aunt	Family
		Age of Lina		
I	2;01.09	2;01.06	2;01.07	2;00.29
II	2;02.15	2;02.17	2;02.08	2;02.10
III	2;03.10	2;03.11	2;03.04	2;03.05
IV	2;04.05	2;04.08	2;04.02	–
V	2;05.10	2;05.03	2;05.03	2;05.12
VI	2;06.13	2;06.03	2;06.02	2;06.10
VII	2;07.22	2;07.22	2;07.21	2;07.22
VIII	2;09.11	2;09.14	2;09.10	2;09.17
IX	2;10.08	2;10.06	2;10.06	2;10.09
X	2;10.28	2;11.00	2;10.26	2;10.28
XI	3;00.10	3;00.11	3;00.08	2;11.29
XII	3;01.08	3;01.08	3;01.05	3;01.08
Age 3½	3;07.00	3;06.30	3;06.28	3;06.30
Age 4	4;00.10	4;00.00	4;00.18	4;00.15

Table 4.6: Recordings and transcriptions, Elliot

Set	Mother	Father	Babysitter	Family
		Age of Elliot		
I	2;01.06	2;01.01	2;01.04	–
II	2;02.08	2;02.05	2;02.10	–
III	–	2;03.09	–	–
IV	–	–	–	2;04.19
V	2;04.28	2;04.28	2;05.01	–
VI	2;06.00	2;05.25	2;05.28	2;06.02
VII	2;06.30	2;06.30	2:07.11	2;06.30
VIII	2;08.13	2;08.??[24]	2;08.16	2;08.17
IX	2;09.18	2;09.10	2;09.15	2;09.19
X	2;10.20	2;10.14	2;10.22	2;10.21
XI	2;11.20	2;11.20	2;11.22	2;11.20
XII	3;00.29	3;00.29	–	3;00.29
Age 4	4;01.00	4;01.00	–	–

Despite some gaps, the tables reveal an impressive number of recordings made by the two families. Further, even though a few recordings in the same set are longer than a week apart, many are within a few days of each other or even on the same day.

[24] The precise date is missing for this recording.

It should be pointed out, finally, that there is a slight "flaw" in the research design, namely the fact that Elliot's babysitter is not his main source of input for French. The people Elliot spoke French with most were the employees at his crèche. The recordings with the babysitter thus serve perfectly well for examining Elliot's production of French, but it must be borne in mind that the babysitter's own input is of comparatively little importance in Elliot's acquisition of French. This contrasts with the other five interlocutors, who are the main sources of language input in each case. It should further be pointed out that in the first two French recordings the babysitter is a young woman, while in all the subsequent ones it is the fifteen-year-old son of neighbours.

4.2 Transcription

4.2.1 Names of transcriptions

Before the transcribing process is explained, it is necessary to explain how the transcriptions are referred to. Each transcription is named in the manner of the following example: LIN IX MOT. This refers to the transcription of the recording of Lina, in the ninth recording set, in interaction with her mother. The abbreviations used are:

LIN Lina
ELL Elliot
MOT Mother
FAT Father
FAM Family
AUN Aunt
BBS Babysitter

Conveniently, and by coincidence, the number of the recording sets corresponds approximately to the number of months after the child's second birthday. Thus in LIN I, Lina is 2;1, in LIN II she is 2;2 and so on.

4.2.2 Recordings chosen for transcription

The recordings which were transcribed are indicated in tables 4.5 and 4.6 above (cells shaded in grey). The recordings of the children with single interlocutors were all transcribed with one exception. In ELL III there is

neither a recording for the mother nor for the babysitter. For this reason the recording of the father was left out in order to try and maintain even sets of data.

The family recordings were examined in order to see whether the parents spoke similarly with their children in the family context compared to in dyadic interactions, as well as to observe the languages used between the parents. In order to answer these two questions, it was not considered necessary to transcribe all the family recordings; thus, it was decided to transcribe the first and the last family recording in the main data set, namely LIN I and XII, and ELL IV and XII. However, in LIN I, there is no interaction between the parents. They are both looking at picture books with their daughter. For the first five minutes of the recording the mother is pointing out objects to her daughter in one book, with occasional contributions from the father. After five minutes they take a new book, and the father takes over the storyteller role until the end of the recording (with occasional contributions from the mother). For this reason, the next earliest family recording was taken for analysis, namely LIN II. Overall, 44 transcriptions were made for Lina and 33 for Elliot.

4.2.3 Lag between recording and transcription

It is well known that transcription should take place as soon as possible after recording (see e.g. De Houwer 1990: 79, Cruz Ferreira 2006: 49). When the investigator/transcriber is present during the recording sessions, the reason for this is obvious: the smaller the time gap between recording and transcription, the better the context of the interaction will be remembered. In this case, however, the investigator – myself – was not present during the recording sessions. Nevertheless, immediacy must still be considered important. Since I was in regular contact with the caregivers, immediate transcription would have meant that any questions arising could have been discussed soon after the interaction, while the caregivers could still remember what had taken place. Unfortunately, due to various circumstances, it was possible to complete only a small number of transcriptions soon after the recordings. I compensated for this by listening to all of the recordings almost as soon as I received them and noting anything that needed clarification.

When explanations were needed – for example, what game exactly they were playing – I could contact the parents/aunt straightaway to ask. Of course, once transcription began in earnest, close to a year after the final recording was received, further questions inevitably arose (for example, why Elliot used a certain dialectal form in his Swiss German not found in the father's speech). All of these further questions, happily, could still be answered by the parents and aunt, despite the time gap between recording and transcription. In sum, it is difficult to gauge whether any disadvantage was incurred in not having transcribed all the recordings immediately after they were made. It is to be hoped that the compensatory steps outlined above means that little – if any – contextual information was lost.

4.2.4 Section of the recording transcribed

In each case, the first quarter of an hour of the recordings was transcribed. Transcription started generally not from the moment the recording starts but some seconds (or occasionally minutes) into it. This was because the adults had been asked to give some contextual information at the beginning of the recording itself (participants, time, place, activity) in a different room to where the child was. Sometimes it then took them some time to get the child to the room where the recorder was, or unobtrusively bring the recorder to the child. (Note that the instruction was often, but not always, complied with.) In a few cases, a later part of the recording had to be used because the first part was too difficult to understand. For example, in ELL VII BBS the recording begins with Elliot throwing dolls/toys on the floor and both the child and the teenager talking about the their injuries. While the teenager is easy to understand, the child has a "play aggressive", growling tone and is often incomprehensible. The difficulty is compounded by the noise of the toys being banged on the floor and the accompanying onomatopoeic sounds of the banging by the child. After a while, the mother enters the room and suggests (in French) that they look at a book instead, so that there would be more "discussion". This instance, it should be pointed out, is the only obvious case of the study affecting the behaviour of the participants – it is not clear whether the mother would have intervened had the child not been in the process of being recorded. Further, occasionally a section was not transcribed within the first quarter of an hour because, for example, the child had left the

room or because there was excessive noise. In this case, the amount of time omitted was simply added on until a quarter of an hour was reached.

It should be noted that the quarter of an hour was approximate since transcription was not stopped in the middle of an utterance nor, for example, before the second half of an adjacency pair was given. The precise times are given in Appendix 3. The reader will note that occasionally the transcription time is less than a quarter of an hour. This is simply because the recording did not reach fifteen minutes. The total amount of time transcribed was nineteen and a half hours: eleven and a half hours for Lina, and eight for Elliot.

It is known that not all researchers like to use the beginning of a recording. Genesee, Nicoladis and Paradis (1995: 618), for example, in their study of five English-French bilingual children, began transcription consistently after the first five minutes of the recording. It is felt that participants might behave less naturally at the beginning since they are unused to being recorded. This initial awkwardness, it is assumed, will wear off, after a time. This may indeed be the case for one-off recordings, experimental studies, and studies where there is an unfamiliar investigator. However, in this study, the children were not told they were being recorded, and it is assumed that the caregivers did not consider that their own language was an object of interest. In addition, neither the children nor their interlocutors were doing anything out of the ordinary. There was no prescribed activity and no investigator present. Further, the recordings were done over such a long period that they became a routine. The family was simply recording, month after month, slices of their daily lives. For this reason, all parts of the recording were considered equally natural, and there was no disadvantage to using the beginning. An advantage was that usually a new activity was starting (e.g. sitting down to breakfast or beginning a game), which made the transcription more coherent than it would have otherwise been.

4.2.5 What was transcribed

All the speech heard on the recordings was transcribed. In addition, any sounds relevant to the conversation were also noted. For example a child's

coughing may or may not be relevant to the conversation depending on whether the interlocutor reacts to it or the child comments on it.

4.2.6 Transcribers and transcribing time

Transcription was undertaken by two trained assistants and myself. The assistants were both students majoring in English linguistics and native speakers of Swiss German. They transcribed all the Swiss German context recordings and some of the English context ones. I transcribed all the French context recordings and the remaining English context ones. I checked all the transcriptions done by the assistants. Resources were too limited, however, for a second person to check my own transcriptions. Nevertheless, before coding, I checked every transcription (irrespective of who had transcribed it) once again. The overall time invested in transcribing was approximately one working day per 15 minute transcription.

4.2.7 Transcription conventions

The recordings were transcribed orthographically, supplemented by phonetic transcription when necessary. The orthography for Swiss German follows the conventions outlined by Dieth (1986 [1938]), with the exception that nouns are not capitalised. The transcription conventions follow CHAT, Codes for the Human Analysis of Transcription (MacWhinney 2011). For ease of reference, a list and brief explanation of all the conventions which appear in the examples in this study are given in Appendix 1. For those readers not familiar with the CHAT system, it is necessary to point out one important principle (MacWhinney 2011: 20): there is a speech line called the "main line", which consists of each new utterance. The speaker of each utterance is indicated by an asterisk followed by a code of three capital letters. For example, *LIN in this study means Lina is the speaker. Below the main line, further lines can be added for coding and commentary. These "dependent tiers" are always three letters long and begin with the % sign. For example, *%com* means 'comment'.

Example: *LIN: cat.
%com: whispered

This system makes examples rather long, but has the advantage of keeping the speech lines uncluttered.

A few exceptions to the conventions were felt to be necessary. First, while the children's speech is accorded one main line per utterance, as stipulated by the CHAT conventions (p. 20), adult speech is only given a new main line per turn. This is because the unit of analysis for adult speech is only the turn and never the utterance. Second, conventional orthography is kept in cases of words joined by hyphens and apostrophes. For example, the French *est-ce* ('is it') and *l'ours* ('the bear') are spelt in their usual way, and not as *est ce* or *l' ours* as in CHAT (p. 53). Finally, there are two discrepancies between the conventions used in the transcriptions themselves, and those used in the speech samples presented here. One is that there are no translations into English in the originals; translations have only been added for the examples. Note that these are idiomatic translations unless otherwise stated. Note further that the following utterances are not translated: one word utterances of JA and *oui* ('yes' in Swiss German and French respectively), and one word utterances in which the written form is the same as in English (e.g. French *tricycle*). The other difference is that in the original transcriptions the languages used have been coded in a dependent language tier, as is the convention in CHAT (p. 81). However, in the speech samples reproduced here, this language tier is not usually reproduced in order to keep the examples as unencumbered as possible. Rather, the different languages are represented in the following manner: English is in bold, French is italicised and Swiss German is in small capitals. Elements which happen to be the same in more than one language are marked more than once (for example: **PINK**); in such cases, when the spelling happens to differ in the two languages, I chose the spelling of the language I thought the item was mostly likely to be from. Items which have not been assigned to any language are not marked at all (for example: huh?) – unless they occur within an utterance entirely in one language, in which case they are marked as part of that language (for example: **that's good, huh?**). Within running text, the same system is used, with the exception that single items not assigned to any language are underlined in order set them apart from the main text (for example: <u>huh</u>). A detailed description of language coding is given in section 4.3.

4.2.8 Determining the utterance

As in classic studies of bilingual child language acquisition (De Houwer 1990, Lanza 2004), the utterance was determined according to intonational contour. A segment of speech was considered an utterance whenever there was a terminal intonation contour. The three types of terminal contour were final (marked by a period), appealing (marked by a question mark) and exclamatory (marked by an exclamation mark). The main reference works used for intonation were Cruttenden (1997) and Botinis, Granström and Möbius (2001).

On occasion, a turn finished despite the fact that a speaker's utterance displayed no terminal contour. Besides the obvious examples of interruption, some utterances ended on a tone of continuation ("more to come"). In this case, the trailing off symbol (+…) was used, as in the example below.

Example 4.1	**LIN XII MOT**
*MOT:	WAS ÄCHT GSEHSCH DU ALLES UF DEM BILD, LINA?
%eng:	what are all the things you can see in this picture, Lina?
*LIN:	ÄHM, GMÜES, SUNNESCHII, # U:ND, [/] UND GMÜE:S, UND GMÜ:ES +...
%eng:	um, vegetables, sunshine, # and, [/] and vegetables, and vegetables +…
*MOT:	MHM, WAS DA FÜR GMÜES?
%eng:	mhm, what kind of vegetables?

In adult speech, this type of intonation was especially made use of to indicate that the child should complete the utterance, as in the example below.

Example 4.2	**LIN VII AUN**
*AUN:	**[…] one. two +…**
*LIN:	**three, four, five, six, seven, eight, nine, ten.**

Sometimes appeal intonation, marked with the symbol +..?, rather than trailing off intonation, was used to indicate the child should complete the utterance, as in the example below.

Example 4.3 **ELL I BBS**

*BBS: *ça c'est un +..?*

%eng: that's a +..?

*ELL: **bus**.

One final point concerning the identification of utterances is that single utterances sometimes span another's turn. This is common with back-channelling. In the following example, the father's JA is uttered in between the child's first and second word. This is represented in the following way in the CHAT system (MacWhinney 2011: 72):

Example 4.4 **ELL VI FAT**

*ELL: DÖTA [>] *ça c'est* pi [/] PIRAT, DEE.

%eng: there [>] that's pi [/] pirate, him.

* FAT: [<] <JA>.

4.2.9 Determining the turn

The criterion for the boundary of turns was a vocal turn on the part of another speaker. The turn did not necessarily have to consist of language, as in the following example where Elliot's imitation of a pig snorting consists of a turn.

Example 4.5 **ELL V MOT**

@Situation: Elliot and his mother are looking at a picture book, naming animals.

*MOT: **<what's his> [/] what's his name?**

*ELL: &=snorts.

*MOT: **yes lovey, that's the noise he makes, but do you know what his name is? hm? pig!**

*ELL: **pig!**

The only exception to this way of demarcating a turn are utterances which are interspersed or overlapped by speech from another speaker, as can be seen in example 4.4 above. Such utterances were counted as one turn, not two.

4.3 Language coding

4.3.1 Seven basic varieties

The children's utterances and the adults' turns were coded according to seven basic possibilities.[25] These seven choices fall into three main sets: speech in one language, speech in two languages, and speech in all three languages. The languages/language combinations in each set are listed below in alphabetical order.

1. English
2. French
3. Swiss German
4. English + French
5. English + Swiss German
6. French + Swiss German
7. English + French + Swiss German

Language assignment was based on lexis. Where languages had similar or identical vocabulary items, pronunciation was the guide for assignment. Thus, for example, the English **hand** [hænd] and Swiss German HAND [hand] could be distinguished. Where assignment via this method was doubtful, the category "other" was chosen (see below). In one case, the same lexical item was categorised differently according to variation in pronunciation. This occurred with the frequently used Swiss German word LUEG/LUG, a cognate of the English **look**. When the Swiss German word is pronounced with a diphthong LUEG [lʊəǧ][26] it is recognisably Swiss German; however, the word can also be pronounced without the diphthong as LUG [lʊǧ], making it virtually indistinguishable from the English **look**. [lʊəǧ] was thus categorised as Swiss German, [lʊǧ] as "other". This can be seen in the following example, where Lina utters the word three times in a row, the first time pronouncing it with a diphthong, the second and third times without. The first instance was coded as Swiss German, the other two as "other".

Example 4.6 **LIN I MOT**

*LIN: LUEG [!].

[25] The main references for language coding were De Houwer (2009: 63–4), Lanza (2004: 105–7) and Quay (2001: 167–8).

[26] For a description of voiceless obstruents in Swiss German see section 5.2.3.

*LIN: **LUG** [!].
*LIN: **LUG** [!].

Problematic are cases in which it is not clear if one is dealing with a borrowing or a code mix. For example, in Swiss German COWBOY can be pronounced with a Swiss German pronunciation [kɔbɔɪ] but also just as in English [kaʊbɔɪ], without this being marked. For this reason, COWBOY pronounced as in English in a Swiss German conversation was not counted as a code mix. I always chose a conservative interpretation, and any words in which it was not clear whether they were examples of code mixing or borrowing were treated as borrowings.

4.3.2 Other

Speech which did not fall into a specific language category was categorised as "other". These comprised the following (adapted from Quay 2001: 167–168):

- unintelligible speech;
- proper names including names of fictional characters, as well as kinship terms such as daddy used as proper names (but not, for example, **a daddy** when a child is describing a male character in a book);
- speech which could belong to both the context language (i.e. the language being spoken by the adult) and another language;
- child forms which contain fewer than two phonemes of the target word, even if the target is clear from the context.

This last point requires some explanation. In order to be classified as belonging to a particular language, any form a child uses must have a certain phonetic proximity to the target form. Following Montanari (2005: 1664), a child form was considered close enough if it contained at least two phonetic units of the target form. I illustrate this distinction in example 4.7. In this example, Elliot is attempting to say the French word for 'glasses', which is *lunettes* [lynɛt]. However, his first rendition, [ledo], contains only one phonetic unit which matches the target word. Thus the form is not categorised as a French utterance. His second attempt, [lydɛt], is closer to the target form, having at least two phonetic units which are the same (in fact there are four in this particular case).

Example 4.7 **ELL I BBS**

*BBS: *et puis il a quoi là? c'est quoi ça?*
%eng: and then what does he have there? what's that?
*ELL: lédo.
%pho: [ledo]
*ELL: *ludettes*.
%pho: [lydɛt]
%eng: glasses.

Occasionally, metathesis of the target form occurred. In the following example, Elliot is trying to say the French word *guèpe* ('wasp'). In his first attempt the ending is deleted. In the second attempt the target ending [p] is substituted with [t]. His third attempt is an example of metathesis: *pègue*. In his fourth attempt, he manages the target form. In his first three attempts, at least two phonemes of the target form appear in the child's form, thus all these instances were counted as French.

Example 4.8 **ELL II BBS**

*ELL: *une guè(pe).*
%eng: a wasp.
*BBS: *guèpe*.
*ELL: *guette*.
*BBS: *non, guèpe.*
%eng: no, wasp.
%pho: enunciates lexical item very distinctly, pronouncing final *e*
*ELL: *pègue*.
%com: also enunciates very distinctly, pronouncing final *e*
*BBS: *regarde. Elliot. guèpe.*
%eng: look. Elliot. wasp.
%pho: enunciates lexical item very distinctly, pronouncing final *e*
*ELL: *guèpe*.
%pho: also enunciates very distinctly, pronouncing final *e*

Utterances containing ambiguous elements, plus elements which could be assigned to one of the seven language categories, were assigned according to

that language category. This is illustrated with the following example, which revolves around the French word *vélo* ('bicycle'). This word is a French borrowing in Swiss German, so within an entirely Swiss German utterance VELO (spelt without accent in Swiss German) is not a French mix. A one-word utterance of *VÉLO*, however, must be classified as "other", since we cannot know which language it belongs to. The pronunciation is close enough in both languages to make pronunciation as a criterion too difficult. An example of how such items were coded can be seen below. (Here and in some other examples, the speech lines are numbered in order to facilitate discussion.)

Example 4.9 **ELL VIII BBS**

@Situation:	Elliot and his babysitter are looking at a picture of a tricycle. Elliot is calling the object a bicycle.
*ELL:	*VÉLO*. (1)
%eng:	bicycle.
*BBS:	*tricycle*. (2)
*ELL:	D(AS) ISCH VELO. (3)
%eng:	that's bicycle.
*BBS:	*tricycle*. (4)
*ELL:	*VÉLO*. (5)
BBS:	*c'est un tri:cy:cle*. (6)
%eng:	it's a tricycle.
*ELL:	*non c'est vélo*. (7)
%eng:	no it's bicycle.
*BBS:	*tricycle*. (8)
*ELL:	*VÉLO*. (9)

In turns (1), (5) and (9), the one-word utterance is classified as "other". Within a Swiss German utterance in turn (3) it is classified as Swiss German and within a French utterance in turn (7) as French.

4.3.3 Further languages and language combinations

From the perspective of the speaker, the seven possibilities are those outlined above. However, from the perspective of the coder more categories exist. For example, if a child utters *MERCI* ('thank you' in French, borrowed into Swiss

German) in a French or Swiss German context, the word is categorised as "other" since it is ambiguous. But if it is uttered in an English context, this is clearly a mix. While we cannot assign *MERCI* to either French or Swiss German unequivocally, we know that it is not English. Thus, such an utterance is classified as "French or Swiss German in an English context". Following this logic, three further categories are needed:

- Either English or French in a Swiss German context
- Either English or Swiss German in a French context
- Either French or Swiss German in an English context

In fact, many more combinations are theoretically possible, and further combinations did occur. For example, in ELL VIII BBS Elliot is talking to his babysitter about an elephant. The entire utterance is in French except for the ending of one word: *élépha***NT**. In French, the word should end in the nasal vowel [ɑ̃]. However, Elliot adds on the two consonants [nt], the ending in English and Swiss German. Here, therefore, we have yet another categorisation, namely: "French + either English or Swiss German".

In addition to these various combinations, a fourth language also came into play, namely Standard German. As is known, German-speaking Switzerland is diglossic, and Standard German is the language used in education and in writing, although no native Swiss speaks it as a native language. Pre-school aged children do not usually have a great deal of exposure to the variety except via television, and the occasional quotation from adults.[27] For example, when Elliot's father is reading a book to him, he utters one line, an incantation, in Standard German: Hühnerblut und faule Knochen ('chicken blood and rotten bones'). All the rest of the story is – as is usual for Swiss parents reading to preschoolers – translated into the dialect.

All the varieties, and all combinations of these, were used in the language coding. This detailed coding can be seen in the language production tables of the children in Appendix 4. However, unless relevant for the particular analysis in question, only the seven basic categories listed at the beginning of this section, plus "other", are used. For example, in the entire corpus there are

[27] Ferguson, in his seminal article on diglossia first published in 1959, pointed out that one area in which the standard appeared in everyday conversations was for "proverbs, politeness formulas, and the like" (2003: 348).

three instances of Standard German in Lina's speech, and two instances in Elliot's.[28] In the tables showing the children's language production in section 5.1, these five instances are simply placed in "other" since they are not relevant to the question of the children's overall trilingual language production. Naturally, I always indicate whenever categories have been combined in this way, or whenever categories are omitted.

4.4 Conclusion

The question posed in this study, namely that of the correlation between contextual factors and trilingual language acquisition, requires an in-depth examination of various aspects of the child's environment. Such an examination necessarily limits research to one or maximally a small number of case studies; it is impossible to use such a method of analysis with many children. The present study is thus restricted to case studies of two children. However, these two case studies are conducted against the background of previous bi- and trilingual studies, described in chapters two and three. The findings from these studies inform the present one, and are drawn upon in the analyses of the results. The present enquiry is therefore not simply concerned with two isolated case studies but rather builds upon all findings related to the question at hand.

[28] Obviously, we are dealing with words that differ in Swiss German and Standard German. Many are the same, e.g. JA, all of which were counted as Swiss German.

5
The Children's Production of Their Three Languages

5.0 Introduction

This chapter focuses on the children's language production. It does so from the angle of the following two questions, namely, 1) *To what extent do the children speak the languages they are exposed to?* and 2) *What are their order and levels of language dominance?* Language dominance is defined here according to relative proficiency and the extent to which one language has influence over another. Note that while acknowledging that a bi- or multilingual person may be dominant in one language in one area of their life (e.g. in family conversations), and dominant in another language in a different area (e.g. doing maths), I begin with the assumption that this will not be the case for two-year-olds, since their sphere of activities is not sufficiently specialised. However, it is possible for them to be dominant in different linguistic domains: De Houwer has shown that very young bilinguals can be dominant in the production of one language and in the comprehension of another (2011).

5.1 Relative quantity

In the following, the children's production of each language in each dyad is quantified. The results give an answer to the first question, namely the extent to which Lina and Elliot speak the languages of their caregivers. Each of the children's utterances was classified into one of the following categories:

E:	utterance uniquely in English
F:	utterance uniquely in French
S:	utterance uniquely in Swiss German
EF:	utterance containing both English and French
ES:	utterance containing both English and Swiss German
FS:	utterance containing both French and Swiss German
EFS:	utterance containing English, French and Swiss German
O:	utterance categorised as "other"
yes:	utterance consisting only of **yes**
ja/yeah:	utterance consisting only of JA or **yeah**

oui: utterance consisting only of *oui*

The criteria for assigning an utterance to a particular language or to the category of "other" were described in section 4.3. In addition, three further categories were added, namely utterances consisting uniquely of **yes**, of JA/**yeah** and of *oui* (I will refer to these collectively as 'yes'-utterances from now on). The separation of 'yes'-utterances was done for two reasons. The main reason was that the number of occurrences of 'yes'-utterances was highly activity-bound. This risked skewing both the language quantity results, and especially the Mean Length of Utterance counts (see section 5.2.1 below). The extent to which 'yes'-utterances were activity-bound can be seen in the comparison of two French recordings. In ELL XI BBS, the final recording of Elliot with his babysitter, 8% of Elliot's utterances comprise the one-word utterance *oui* (40/220). This is because Elliot and his babysitter were playing a ball game, and a considerable amount of the conversation consist of exchanges in which the babysitter is asking the French equivalents of: 'are you ready?' and 'shall I throw it to you now?' and the child is simply replying *oui*. In the first French recording, on the other hand, which mainly consists of a book-reading activity, there are no one-word utterances of *oui*. A further reason for separating one-word 'yes'-utterances is that JA and **yeah** were sometimes difficult to distinguish, and the existence of **ya** in English creates further ambiguity. Since **yes** and *oui* are unequivocal, however, three separate categories of 'yes'-utterances were maintained. Note that the same two problems did not occur with the equivalents of 'no'. Firstly, it was not used by the children in anywhere near the same proportion as 'yes', and secondly, there were only very few instances in which **no**/*non*/NEI were not clearly language-assignable.

In order not to overcomplicate the picture, and as was pointed out in the previous chapter, the rare occurrences of Standard German (five in the entire corpus of the children's speech data) were incorporated into the figures for "other". For the same reason, further categories such as the few mixed utterances like *c'est* **PINK** (French plus English or Swiss German) were also incorporated into the category of "other" (see section 4.3 for a description of

such cases). The precise breakdown, however, including the above distinctions, can be seen in the tables in Appendix 4.

The following six sets of tables show each child's language production with each interlocutor. Each set contains three tables. The first table shows the number of utterances the child produces according to the eleven categories described above. The second table shows the percentages of these figures. In addition, in order to create as clear a picture as possible, I also include a third, simplified table showing a comparison of just three types of utterances, namely those uniquely in English, French and Swiss German. In the tables, the shaded column highlights the figures for the context language, that is the language of the adult interlocutor. Note that the abbreviations used in the table are those listed at the beginning of this section. Note also that, as was pointed out in chapter four, there are no transcriptions for sets ELL III and IV (all interlocutors), as well as ELL XII BBS. Further, in these tables the figures are not included for ELL IX MOT since this is a triadic conversation including Elliot's brother.[29]

[29] For a discussion of language use between the brothers, see section 6.1 "Sibling language choice".

Table 5.1: Language of Lina's utterances with mother: number

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	0	12	78	0	0	1	0	23	9	0	0	123
II	0	0	72	0	0	0	0	11	21	0	0	104
III	0	2	61	0	0	1	0	27	5	0	0	96
IV	0	0	66	0	0	0	0	8	16	0	0	90
V	0	1	69	0	0	0	0	14	11	0	0	95
VI	0	0	73	0	0	0	0	12	29	0	0	114
VII	0	0	54	0	0	0	0	10	12	0	0	76
VIII	0	1	70	0	0	0	0	8	12	0	0	91
IX	0	0	73	0	0	0	0	5	9	0	0	87
X	4	4	99	0	2	1	0	13	4	0	0	127
XI	2	0	72	0	1	0	0	14	2	0	0	91
XII	0	0	97	0	0	2	0	6	13	0	0	118
Total	6	20	884	0	3	5	0	151	143	0	0	1212

Table 5.2: Language of Lina's utterances with mother: percentage

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	0.00	9.76	63.41	0.00	0.00	0.81	0.00	18.70	7.32	0.00	0.00	100
II	0.00	0.00	69.23	0.00	0.00	0.00	0.00	10.58	20.19	0.00	0.00	100
III	0.00	2.08	63.54	0.00	0.00	1.04	0.00	28.13	5.21	0.00	0.00	100
IV	0.00	0.00	73.33	0.00	0.00	0.00	0.00	8.89	17.78	0.00	0.00	100
V	0.00	1.05	72.63	0.00	0.00	0.00	0.00	14.74	11.58	0.00	0.00	100
VI	0.00	0.00	64.04	0.00	0.00	0.00	0.00	10.53	25.44	0.00	0.00	100
VII	0.00	0.00	71.05	0.00	0.00	0.00	0.00	13.16	15.79	0.00	0.00	100
VIII	0.00	1.10	76.92	0.00	0.00	0.00	0.00	8.79	13.19	0.00	0.00	100
IX	0.00	0.00	83.91	0.00	0.00	0.00	0.00	5.75	10.34	0.00	0.00	100
X	3.15	3.15	77.95	0.00	1.57	0.79	0.00	10.24	3.15	0.00	0.00	100
XI	2.20	0.00	79.12	0.00	1.10	0.00	0.00	15.38	2.20	0.00	0.00	100
XII	0.00	0.00	82.20	0.00	0.00	1.69	0.00	5.08	11.02	0.00	0.00	100
Average	0.50	1.65	72.94	0.00	0.25	0.41	0.00	12.46	11.80	0.00	0.00	100

Table 5.3: Lina's E, F, and S utterances with mother

Transcription	E	F	S	Total
I	0	12	78	90
II	0	0	72	72
III	0	2	61	63
IV	0	0	66	66
V	0	1	69	70
VI	0	0	73	73
VII	0	0	54	54
VIII	0	1	70	71
IX	0	0	73	73
X	4	4	99	107
XI	2	0	72	74
XII	0	0	99	99
Total	6	20	884	910
%	1	2	97	100

Summary of tables 5.1–5.3:

Of all Lina's utterances to her mother, 884/1212 or 73% are in Swiss German. Comparing only utterances uniquely in the three languages, 884/910 or 97% are in Swiss German.

Table 5.4: Language of Lina's utterances with father: number

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	0	11	10	0	0	1	0	33	1	0	0	56
II	0	16	32	0	0	1	0	13	10	1	0	73
III	0	13	32	0	1	3	0	8	0	0	0	57
IV	0	8	82	0	0	2	0	31	8	0	0	131
V	1	5	64	0	0	3	0	31	18	0	1	123
VI	0	14	99	0	0	4	0	22	24	0	0	163
VII	0	4	89	0	0	4	0	19	12	0	0	128
VIII	0	8	65	0	0	0	0	11	21	0	0	105
IX	5	9	45	1	1	1	0	14	8	0	0	84
X	0	6	68	0	0	3	0	18	12	0	0	107
XI	0	5	70	0	0	3	0	13	1	0	0	92
XII	0	9	49	0	0	0	0	20	7	0	0	85
Total	6	108	705	1	2	25	0	233	122	1	1	1204

Table 5.5: Language of Lina's utterances with father: percentage

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	0.00	19.64	17.86	0.00	0.00	1.79	0.00	58.93	1.79	0.00	0.00	100
II	0.00	21.92	43.84	0.00	0.00	1.37	0.00	17.81	13.70	1.37	0.00	100
III	0.00	22.81	56.14	0.00	1.75	5.26	0.00	14.04	0.00	0.00	0.00	100
IV	0.00	6.11	62.60	0.00	0.00	1.53	0.00	23.66	6.11	0.00	0.00	100
V	0.81	4.07	52.03	0.00	0.00	2.44	0.00	25.20	14.63	0.00	0.81	100
VI	0.00	8.59	60.74	0.00	0.00	2.45	0.00	13.50	14.72	0.00	0.00	100
VII	0.00	3.13	69.53	0.00	0.00	3.13	0.00	14.84	9.38	0.00	0.00	100
VIII	0.00	7.62	61.90	0.00	0.00	0.00	0.00	10.48	20.00	0.00	0.00	100
IX	5.95	10.71	53.57	1.19	1.19	1.19	0.00	16.67	9.52	0.00	0.00	100
X	0.00	5.61	63.55	0.00	0.00	2.80	0.00	16.82	11.21	0.00	0.00	100
XI	0.00	5.43	76.09	0.00	0.00	3.26	0.00	14.13	1.09	0.00	0.00	100
XII	0.00	10.59	57.65	0.00	0.00	0.00	0.00	23.53	8.24	0.00	0.00	100
Average	0.50	8.97	58.55	0.08	0.17	2.08	0.00	19.35	10.13	0.08	0.08	100

Table 5.6: Lina's E, F, and S utterances with father

Transcription	E	F	S	Total
I	0	11	10	21
II	0	16	32	48
III	0	13	32	45
IV	0	8	82	90
V	1	5	64	70
VI	0	14	99	113
VII	0	4	89	93
VIII	0	8	65	73
IX	5	9	45	59
X	0	6	68	74
XI	0	5	70	75
XII	0	9	49	58
Total	6	108	705	819
%	1	13	86	100

Summary of tables 5.4–5.6:

Of all Lina's utterances to her father, 108/1204 or 9% are in French. Comparing only utterances uniquely in the three languages, 108/819 or 13% are in French.

Table 5.7: Language of Lina's utterances with aunt: number

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	43	2	34	0	1	0	0	44	3	0	0	127
II	30	0	15	0	1	0	0	19	1	2	0	68
III	24	0	8	0	0	0	0	13	0	0	0	45
IV	18	0	24	0	0	0	0	15	2	0	0	59
V	37	0	33	0	1	0	0	31	0	0	0	102
VI	46	0	39	1	1	0	0	20	8	0	0	115
VII	37	0	34	0	1	0	0	14	5	0	0	91
VIII	45	0	44	0	1	0	0	10	11	1	0	112
IX	29	0	50	0	1	0	0	27	18	1	0	126
X	66	0	40	0	2	0	0	12	13	1	0	134
XI	76	0	41	0	7	0	0	49	4	0	0	177
XII	32	0	43	0	6	0	0	20	1	0	0	102
Total	483	2	405	1	22	0	0	274	66	5	0	1258

Table 5.8: Language of Lina's utterances with aunt: percentage

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	33.86	1.57	26.77	0.00	0.79	0.00	0.00	34.65	2.36	0.00	0.00	100
II	44.12	0.00	22.06	0.00	1.47	0.00	0.00	27.94	1.47	2.94	0.00	100
III	53.33	0.00	17.78	0.00	0.00	0.00	0.00	28.89	0.00	0.00	0.00	100
IV	30.51	0.00	40.68	0.00	0.00	0.00	0.00	25.42	3.39	0.00	0.00	100
V	36.27	0.00	32.35	0.00	0.98	0.00	0.00	30.39	0.00	0.00	0.00	100
VI	40.00	0.00	33.91	0.87	0.87	0.00	0.00	17.39	6.96	0.00	0.00	100
VII	40.66	0.00	37.36	0.00	1.10	0.00	0.00	15.38	5.49	0.00	0.00	100
VIII	40.18	0.00	39.29	0.00	0.89	0.00	0.00	8.93	9.82	0.89	0.00	100
IX	23.02	0.00	39.68	0.00	0.79	0.00	0.00	21.43	14.29	0.79	0.00	100
X	49.25	0.00	29.85	0.00	1.49	0.00	0.00	8.96	9.70	0.75	0.00	100
XI	42.94	0.00	23.16	0.00	3.95	0.00	0.00	27.68	2.26	0.00	0.00	100
XII	31.37	0.00	42.16	0.00	5.88	0.00	0.00	19.61	0.98	0.00	0.00	100
Average	38.39	0.16	32.19	0.08	1.75	0.00	0.00	21.78	5.25	0.40	0.00	100

Table 5.9: Lina's E, F, and S utterances with aunt

Transcription	E	F	S	Total
I	43	2	34	79
II	30	0	15	45
III	24	0	8	32
IV	18	0	24	42
V	37	0	33	70
VI	46	0	39	85
VII	37	0	34	71
VIII	45	0	44	89
IX	29	0	50	79
X	66	0	40	106
XI	76	0	41	117
XII	32	0	43	75
Total	483	2	405	890
%	54	0	46	100

Summary of tables 5.7–5.9:

Of all Lina's utterances to her aunt, 483/1258 or 38% are in English. Comparing only utterances uniquely in the three languages, 483/890 or 54% are in English.

Table 5.10: Language of Elliot's utterances with mother: number

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	29	8	18	0	2	0	0	30	3	0	0	90
II	42	18	0	8	1	0	0	69	7	1	0	146
III	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–
V	128	16	5	2	1	0	0	62	13	0	0	227
VI	100	1	2	0	1	0	0	36	3	1	0	144
VII	132	2	1	3	0	0	0	25	33	0	0	196
VIII	125	0	2	0	1	0	0	23	6	4	0	161
IX	–	–	–	–	–	–	–	–	–	–	–	–
X	111	0	1	0	4	0	0	13	5	12	0	146
XI	151	0	0	3	5	0	0	22	37	0	0	218
XII	133	1	0	0	0	0	0	20	3	6	0	163
Total	951	46	29	16	15	0	0	300	110	24	0	1491

Table 5.11: Language of Elliot's utterances with mother: percentage

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	32.22	8.89	20.00	0.00	2.22	0.00	0.00	33.33	3.33	0.00	0.00	100
II	28.77	12.33	0.00	5.48	0.68	0.00	0.00	47.26	4.79	0.68	0.00	100
III	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–
V	56.39	7.05	2.20	0.88	0.44	0.00	0.00	27.31	5.73	0.00	0.00	100
VI	69.44	0.69	1.39	0.00	0.69	0.00	0.00	25.00	2.08	0.69	0.00	100
VII	67.35	1.02	0.51	1.53	0.00	0.00	0.00	12.76	16.84	0.00	0.00	100
VIII	77.64	0.00	1.24	0.00	0.62	0.00	0.00	14.29	3.73	2.48	0.00	100
IX	–	–	–	–	–	–	–	–	–	–	–	–
X	76.03	0.00	0.68	0.00	2.74	0.00	0.00	8.90	3.42	8.22	0.00	100
XI	69.27	0.00	0.00	1.38	2.29	0.00	0.00	10.09	16.97	0.00	0.00	100
XII	81.60	0.61	0.00	0.00	0.00	0.00	0.00	12.27	1.84	3.68	0.00	100
Average	63.78	3.09	1.95	1.07	1.07	0.00	0.00	20.05	7.38	1.61	0.00	100

Table 5.12: Elliot's E, F, and S utterances with mother

Transcription	E	F	S	Total
I	29	8	18	55
II	42	18	0	60
III	–	–	–	–
IV	–	–	–	–
V	128	16	5	149
VI	100	1	2	103
VII	132	2	1	135
VIII	125	0	2	127
IX	–	–	–	–
X	111	0	1	112
XI	151	0	0	151
XII	133	1	0	134
Total	951	46	29	1026
%	93	4	3	100

Summary of tables 5.10–5.12:

Of all Elliot's utterances to his mother, 951/1491 or 64% are in English. Comparing only utterances uniquely in the three languages, 951/1026 or 93% are in English.

Table 5.13: Language of Elliot's utterances with father: number

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	6	4	49	0	3	5	0	40	1	0	0	108
II	8	8	65	1	2	3	0	40	12	0	0	139
III	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–
V	2	6	97	0	2	11	0	33	13	0	0	164
VI	29	3	100	0	6	0	0	33	21	0	0	192
VII	7	1	199	1	3	2	0	39	12	0	0	264
VIII	1	2	132	0	1	0	0	28	25	0	0	189
IX	10	1	164	0	5	2	0	40	25	0	0	247
X	1	0	110	0	10	1	0	16	29	0	0	167
XI	5	1	111	1	10	4	0	25	38	0	0	195
XII	2	0	116	0	1	2	0	10	12	0	0	143
Total	71	26	1143	3	43	30	0	304	188	0	0	1808

Table 5.14: Language of Elliot's utterances with father: percentage

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	5.56	3.70	45.37	0.00	2.78	4.63	0.00	37.04	0.93	0.00	0.00	100
II	5.76	5.76	46.76	0.72	1.44	2.16	0.00	28.78	8.63	0.00	0.00	100
III	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–
V	1.22	3.66	59.15	0.00	1.22	6.71	0.00	20.12	7.93	0.00	0.00	100
VI	15.18	1.57	52.36	0.00	3.13	0.00	0.00	17.28	10.99	0.00	0.00	100
VII	2.64	0.38	75.09	0.38	1.14	0.75	0.00	14.72	4.53	0.00	0.00	100
VIII	0.53	1.06	69.84	0.00	0.53	0.00	0.00	14.81	13.23	0.00	0.00	100
IX	4.05	0.40	66.40	0.00	2.02	0.81	0.00	16.19	10.12	0.00	0.00	100
X	0.60	0.00	65.87	0.00	5.99	0.60	0.00	9.58	17.37	0.00	0.00	100
XI	2.56	0.51	56.92	0.51	5.13	2.05	0.00	12.82	19.49	0.00	0.00	100
XII	1.40	0.00	81.12	0.00	0.70	1.40	0.00	6.99	8.39	0.00	0.00	100
Average	3.93	1.44	63.22	0.17	2.38	1.66	0.00	16.81	10.40	0.00	0.00	100

Table 5.15: Elliot's E, F, and S utterances with father

Transcription	E	F	S	Total
I	6	4	49	59
II	8	8	65	81
III	–	–	–	–
IV	–	–	–	–
V	2	6	97	105
VI	29	3	100	132
VII	7	1	199	207
VIII	1	2	132	135
IX	10	1	164	175
X	1	0	110	111
XI	5	1	111	117
XII	2	0	116	118
Total	71	26	1143	1240
%	6	2	92	100

Summary of tables 5.13–5.15:

Of all Elliot's utterances to his father, 1143/1808 or 63% are in Swiss German. Comparing only utterances uniquely in the three languages, 1143/1240 or 92% are in Swiss German.

Table 5.16: Language of Elliot's utterances with babysitter: number

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	2	42	4	0	0	0	0	42	0	0	0	90
II	1	71	1	2	0	2	0	15	0	0	2	94
III	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–
V	0	183	2	0	0	0	1	22	0	0	26	234
VI	2	206	0	2	0	0	0	46	1	0	37	294
VII	0	165	1	1	0	2	0	43	0	0	6	218
VIII	0	80	11	0	0	1	0	68	2	0	10	172
IX	3	129	3	2	0	0	0	29	0	0	20	186
X	5	175	2	3	0	2	0	59	0	0	21	267
XI	1	147	0	1	0	0	0	31	0	0	40	220
XII	–	–	–	–	–	–	–	–	–	–	–	–
Total	14	1198	24	11	0	7	1	355	3	0	162	1775

Table 5.17: Language of Elliot's utterances with babysitter: percentage

Trans.	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	Total
I	2.22	46.67	4.44	0.00	0.00	0.00	0.00	46.67	0.00	0.00	0.00	100
II	1.06	75.53	1.06	2.13	0.00	2.13	0.00	15.96	0.00	0.00	2.13	100
III	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–
V	0.00	78.21	0.85	0.00	0.00	0.00	0.43	9.40	0.00	0.00	11.11	100
VI	0.68	70.07	0.00	0.68	0.00	0.00	0.00	15.65	0.34	0.00	12.59	100
VII	0.00	75.69	0.46	0.46	0.00	0.92	0.00	19.72	0.00	0.00	2.75	100
VIII	0.00	46.51	6.40	0.00	0.00	0.58	0.00	39.53	1.16	0.00	5.81	100
IX	1.61	69.35	1.61	1.08	0.00	0.00	0.00	15.59	0.00	0.00	10.75	100
X	1.87	65.54	0.75	1.12	0.00	0.75	0.00	22.10	0.00	0.00	7.87	100
XI	0.45	66.82	0.00	0.45	0.00	0.00	0.00	14.09	0.00	0.00	18.18	100
XII	–	–	–	–	–	–	–	–	–	–	–	–
Average	0.79	67.49	1.35	0.62	0.00	0.39	0.06	20.00	0.17	0.00	9.13	100

Table 5.18: Elliot's E, F, and S utterances with babysitter

Transcription	E	F	S	Total
I	2	42	4	48
II	1	71	1	73
III	–	–	–	–
IV	–	–	–	–
V	0	183	2	185
VI	2	206	0	208
VII	0	165	1	166
VIII	0	80	11	91
IX	3	129	3	135
X	5	175	2	182
XI	1	147	0	148
XII	–	–	–	–
Total	14	1198	24	1236
%	1	97	2	100

Summary of tables 5.16–5.18:
Of all Elliot's utterances to his babysitters, 1198/1775 or 67% are in French. Comparing only utterances uniquely in the three languages, 1198/1237 or 97% are in French.

In order to provide a succinct comparison of the children's overall language production, I present below a comparison of the percentages of utterances uniquely in English, French and Swiss German.

Table 5.19: Lina's percentage of E, F, and S utterances

Interlocutor	English	French	Swiss Germ.	Total
Mother	1	2	97	100
Father	1	13	86	100
Aunt	54	0	46	100

Table 5.20: Elliot's percentage of E, F, and S utterances

Interlocutor	English	French	Swiss Germ.	Total
Mother	93	4	3	100
Father	6	2	92	100
Babysitter	1	97	2	100

Here we see at a glance that – comparing only language-assignable utterances – Lina almost always uses Swiss German with her mother, English around half of the time with her aunt, and rather little French with her father. Elliot on the other hand, mostly uses the language of each of his interlocutors.

5.2 Language dominance

In this section, I move from the relative amount of language the children produce to the question of their language dominance. As stated at the outset of this chapter, dominance was defined according to relative proficiency and the extent to which a particular language was influential over another. In order to ascertain this, answers to the following questions were sought. First, how well do the children speak each of the three languages? Proficiency in production was assessed according to two common measurements, namely Mean Length of Utterance and Upper Bound (discussed in section 5.2.1, below). Second, which language(s) exert(s) more influence over which other language(s)? To answer this question, cross-linguistic influence was examined (sections 5.2.2 and 5.2.3). Third, which language(s) do the children choose when talking to themselves? The language of self-talk was thought to be a possible indicator of which language was more influential (section 5.2.4). Fourth, how well do the children understand the languages they hear? Although not part of language "production" – the focus of this chapter – comprehension is also briefly examined in order to ensure as complete a picture as possible (section 5.2.5). And finally, what are the parents' views? The judgements of the people closest to the children were considered a valuable source of information for the question of language dominance (section 5.2.6).

5.2.1 Mean Length of Utterance and Upper Bound

Mean Length of Utterance (MLU), first introduced by Brown (1973), refers to the average length of a child's utterance in a given transcript and is counted in morphemes or words. It is a useful but also problematic measurement, especially in bi- and multilingual acquisition studies. The main problems are the following: Lanza (2004: 34–35, based on Bates 1988) points out that there is evidence that not all children take the language acquisition path described by Brown, in which children pass through clearly defined stages from one-word

to multiword utterances. Thus, it is problematic to compare MLU scores of different children. It makes even less sense to compare MLU scores of children in different studies, since the data will have been computed differently. According to Lanza, one can, however, compare the "data from a *single* child across different dimensions" (2004: 35). One of the dimensions she investigates is which language the children's utterances are in. Yet this leads to another problem. De Houwer points out, as others have done (e.g. Crystal 1974: 298), that Brown's rules for calculating MLU were designed for English. If one uses these rules for "morphologically more complex languages" (De Houwer 2009: 65) the MLU counts will, all other things being equal, be higher than MLU counts for English. Thus, De Houwer argues, "MLU cannot be compared across different languages" (2009: 65). According to the above argumentation, then, MLU can be compared neither across children nor across languages.

Why has the measurement nevertheless been chosen for the present study? Firstly, I shall not be comparing the MLUs of the two children with each other, since I am seeking to establish the relative proficiency of the three languages for each of the two children individually. Secondly, with regard to the problem of comparing across languages, mean length of utterance was calculated in words (MLUw) rather than morphemes. This addresses the problem of languages which have richer inflectional morphology resulting in higher MLU counts due to the larger number of inflectional morphemes. Note, however, that this does not address the problem of other different structural features in different languages. For example, in spoken French, pronoun resumption is common, e.g. *moi, je veux ça* ('me, I want that'). The equivalent in English is simply **I want that**, and in Swiss German ICH WILL DAS.[30] The same utterance in French is a four-word one, in English and Swiss German a three-word one. Thus, cross-linguistic comparisons are made cautiously, the main emphasis being on the development of the same language for the same child *over time*. In this manner, I hope to have addressed the concerns regarding MLU comparisons both across children as well as across languages.

[30] Or any other form of ICH or WILL, such as I or WETT.

Besides MLU scores, the longest utterances of each child, their Upper Bound (Brown 1973), are also taken into account.

MLU: Material and Method

Twelve sessions were chosen for analysis, namely the first set of dyadic recordings in each language for each child (set I), the last set in which recordings were available for all three languages for both children (set XI), and the set in the middle of these two (set VI).

Only utterances in the context language were considered. For example, Lina's MLU in Swiss German is based on all the utterances Lina made in Swiss German with her mother only, and with no other interlocutor. Note that for the reasons described in section 5.1, 'yes'-utterances were not included.

In order to count the children's words, guidelines for what counted as a word had to be established. Speech consisting of more than one word was only considered multiword if it could be seen that the child was capable of using each word separately up to the period in time being examined (see also Lanza 2004: 124, Montanari 2010: 10). Thus the French *c'est* ('it is') was always counted as a single word, since nowhere in the transcripts can it be seen that the children can use *ce* independently. The Swiss German DAS ISCH and the contracted form DASCH ('that is'), however, were counted as two words, since the children were able to use both DAS and ISCH independently.

This rule, however, was only applied to instances of two grammatical words, as well as 'to be'. For a grammatical plus a lexical item, or two lexical items, the rule was adapted. For example, a child might combine a previously used colour term with a novel noun or use a previously used article with a new noun. In such cases, it seems clear that the child is not chunking. Thus, if *one* of the two items was already used independently, then both items were counted as separate words. If neither were attested independently, the unit was counted as one word. How this was applied can be seen in example 5.1 below. Here, Elliot and his babysitter are looking at a picture book, and Elliot is repeating the names of animals. At one stage they are looking at a giraffe and the babysitter says *et puis ce [/-] cet animal avec un long cou* ('and then this

[/-] this animal with a long neck'). Elliot simply repeats *long cou* ('long neck') as he has been repeating the names of the animals. Neither *long* nor *cou* have been attested independently up to this stage. Thus *long cou* is counted as a one-word utterance.

Example 5.1 **ELL I BBS**

*BBS:	*éléphant. [>] <t'as vu> les grosses fesses de l'éléphant?*
%eng:	elephant. have you seen the big bottom of the elephant?
*ELL:	*[<] <é(lé)phant>.*
%eng:	e(le)phant.
*BBS:	*et puis [>] <ce> [/-] cet animal avec un long cou.*
%eng:	and then [>] <this> [/-] this animal with a long neck.
*ELL:	[<] <xxx>.
*ELL:	*long cou*.
%eng:	long neck
%pho:	[lʊŋka]
%com:	one-word utterance

Further "formulaic" (Lanza 2004: 128) utterances counted as one word were (entire) lines of songs or nursery rhymes and counting sequences (numbers, names of friends).

Names or onomatopoeia, when appearing in an utterance with language-assignable speech, were counted as words. For example, Elliot's utterance of **biscuit, mum** (ELL VI MOT) was counted as a two-word utterance, as was his Swiss German utterance of MACHT SCHNAP+SCHNAP+SCHNAP ('makes snap+snap+snap') (ELL XI FAT).

Utterances containing partly incomprehensible speech were included, the incomprehensible parts ignored. For example, **he xxx happy** (LIN XI AUN) was counted as a two-word utterance.

With utterances containing false starts, repetitions or retracings (definitions according to MacWhinney 2011: 72–4), the fullest form produced was counted (Brown 1973: 54), as in the following example.

Example 5.2 **ELL XI MOT**

*ELL: **<other book>, [/] other book, out.**

%com three-word utterance

Spontaneous utterances versus non-spontaneous utterances

Within the criteria outlined above, the utterances were divided into two categories, namely "all utterances" and "spontaneous utterances". This distinction was considered important in a setting in which there are potentially very different proficiencies, and some exchanges have the character of second language learning lessons. For example, the data revealed that Lina could produce entire five-word utterances in English when repeating something her aunt had just said, but only two-word utterances spontaneously. For the Upper Bound, the longest utterance in the transcript, only spontaneous utterances were counted. The example below shows a five-word, non-spontaneous utterance of Lina.

Example 5.3 **LIN XI AUN**

*LIN: DU FÖTELI MACHE?

%eng: you take (infinitive) photo(s)?

*AUN: **so, you: take a picture.**

*LIN: **yeah, you take a picture.**

%com: non-spontaneous utterance

An utterance was considered a non-spontaneous utterance in two cases. Firstly, when a child, anywhere in their turn, repeated all or part of an utterance in the adult's previous turn and no other element was added (except for *yes* and equivalents). This can be seen in example 5.3 above. An exception to this is when there is a chain of repetitions where the child says something, the adult repeats it, and the child repeats it again. This occurs in example 5.4 below.

Example 5.4 **ELL VI MOT**

@Situation: Elliot is talking to the cat.

*ELL: **look, (s)top it, Pixie.**

*MOT: **stop it, Pixie. what's she doing? she's just sitting there.**

*ELL: **(s)top it, Pixie.**
%com: spontaneous utterance

Note that as soon as a repeated element is combined with a new element, the utterance is considered spontaneous:

Example 5.5 **ELL VI BBS**
*ELL: *c'est quoi?*
%eng: what is it?
*BBS: *crabe*.
%eng: crab.
*ELL: *crabe il est*.
%eng: crab it is.
%com: spontaneous utterance

The second type of utterance counted as non-spontaneous were instances of "filling in the blanks" of a song or nursery rhyme. This can be seen in the following, where Lina's aunt is reciting a rhyme, and is waiting for Lina to fill in as much as possible:

Example 5.6 **LIN XI AUN**
*AUN: **mama called the +..?**
*LIN: **doctor.**
%com: non-spontaneous utterance
*LIN: **doctor said.**
%com: non-spontaneous utterance
*LIN: **no monkeys on the a bed.**
%com: non-spontaneous utterance (target: "no more monkeys on the bed")

MLU: Results for Lina
Tables 5.21–5.23 illustrate the MLUw counts for Lina. The calculation is based on tokens.

Table 5.21: Lina's MLUw for Swiss German utterances

		All utterances	
Transcription	MLU (tokens)	types	tokens
LIN I MOT	1.53	53	78
LIN VI MOT	1.97	63	73
LIN XI MOT	2.74	70	72
		Spontaneous utterances	
Transcription	MLU (tokens)	types	tokens
LIN I MOT	1.57	50	68
LIN VI MOT	1.97	62	71
LIN XI MOT	2.77	69	69

In table 5.21, we can see a strong development in Lina's Swiss German. At age 2;1 her MLUw is around 1.5, by age 3;0 it is around 2.75. The number of types compared to the number of tokens steadily rises, so that by age three all of her spontaneous utterances are different ones.

Table 5.22: Lina's MLUw for French utterances

		All utterances	
Transcription	MLU (tokens)	types	tokens
LIN I FAT	1.00	7	11
LIN VI FAT	1.00	10	14
LIN XI FAT	1.20	4	5
		Spontaneous utterances	
Transcription	MLU (tokens)	types	tokens
LIN I FAT	1.00	4	8
LIN VI FAT	1.00	2	2
LIN XI FAT	1.00	1	2

As table 5.22 reveals, the same development cannot be observed in Lina's French. The number of tokens is small, but the results are nevertheless unequivocal. Although there is one (non-spontaneous) two-word utterance in these three data sets, and there are occasional two-word utterances to be found in other transcripts, overall Lina produces mainly one-word French utterances throughout the entire period.

Table 5.23: Lina's MLUw for English utterances

		All utterances	
Transcription	MLU (tokens)	types	tokens
LIN I AUN	1.00	17	43
LIN VI AUN	1.09	34	46
LIN XI AUN	1.17	44	76
		Spontaneous utterances	
Transcription	MLU (tokens)	types	tokens
LIN I AUN	1.00	5	17
LIN VI AUN	1.15	11	13
LIN XI AUN	1.29	7	7

The results for Lina's MLUw in English in table 5.23 show a slight increase over time. As with French, her utterances are one-word only at age 2;1 but unlike for French, her MLU at age three for her spontaneous utterances is almost 1.3 (albeit based on only seven tokens).

The Upper Bound in each of Lina's languages (for spontaneous utterances only) can be seen in tables 5.24–5.26, below.

Upper Bound of Lina's spontaneous utterances

Table 5.24: Upper Bound of Lina's Swiss German utterances

Age	PB/FC	Trans. length	UB	Types/tokens	Example	English translation
2;01.09	FC	15.00	3	8/8	Lina wot hälfe.	Lina wants to help.
2;06.13	FC	15.02	5	3/3	mama fe(r)tig (mi)t (h)aa(r) (s)t(r)ääle?	mama finished with hair brushing?
3;00.10	FC	15.09	6	3/3	döff i es charte wäg nää?	may I take a card away?

Table 5.25: Upper Bound of Lina's French utterances

Age	PB/FC	Trans. length	UB	Types/tokens	Example	English translation
2;01.06	PB	18.39	1	4/8	lapin.	rabbit.
2;06.03	PB	15.00	1	2/2	bottes.	boots.
3;00.11	FC	15.00	1	1/2	un, deux.[31]	one, two.

Table 5.26: Upper Bound of Lina's English utterances

Age	PB/FC	Trans. length	UB	Types/tokens	Example	English translation
2;01.07	FC	15.01	1	5/17	cow.	n/a
2:06.02	FC	15.00	2	2/2	Marco # flowers.	n/a
3;00.08	PB	15.07	2	2/2	he xxx happy.	n/a

Key: PB: looking at a picture book, FC: free conversation, UB: upper bound

[31] The reader will recall that counting sequences were counted as one-word utterances.

We see that Lina's longest utterance in Swiss German in the first data set is longer than any of her utterances in French or English in the final one. As expected, the Upper Bound of Lina's utterances in Swiss German steadily increases. In French it never passes one word, while in English, from two and a half years on, Lina is uttering spontaneous two-word utterances.

According to the measurements of MLUw and UB, Lina is clearly most proficient in Swiss German, and slightly more proficient in English compared to French.

MLU: Results for Elliot

As with Lina, the results for Elliot are presented in the following order: maternal language, paternal language, other language. In Elliot's maternal language English (table 5.27), we see a strong development from an MLU of approximately one and a quarter at age 2;1 to close to three at age 2;11. The number of types compared to tokens steadily increases:

Table 5.27: Elliot's MLUw for English utterances

		All utterances	
Transcription	MLU (tokens)	types	tokens
ELL I MOT	1.28	19	29
ELL VI MOT	2.02	86	100
ELL XI MOT	2.91	142	151
		Spontaneous utterances	
Transcription	MLU (tokens)	types	tokens
ELL I MOT	1.32	12	22
ELL VI MOT	2.02	86	98
ELL XI MOT	2.92	142	150

In his paternal language, Swiss German (table 5.28), Elliot also shows a steady development, although not such a rapid one as in his maternal language. His utterances are approximately one word long on average at the beginning of the period, and two words long at the end.

Table 5.28: Elliot's MLUw for Swiss German utterances

All utterances			
Transcription	MLU (tokens)	types	tokens
ELL I FAT	1.18	30	49
ELL VI FAT	1.68	64	100
ELL XI FAT	2.01	89	111
Spontaneous utterances			
Transcription	MLU (tokens)	types	tokens
ELL I FAT	1.19	17	31
ELL VI FAT	1.77	54	82
ELL XI FAT	2.07	83	102

In the community language, French, Elliot's MLU for spontaneous utterances at the beginning of the study is already two. However, we see that his MLU does not increase as rapidly as in his parents' languages. The results presented in table 5.29 seem to show that Elliot already has a solid base in French at the beginning of the study compared to his other two languages, which is then consolidated only comparatively slowly.

Table 5.29: Elliot's MLUw for French utterances

All utterances			
Transcription	MLU (tokens)	types	tokens
ELL I BBS	1.57	33	42
ELL VI BBS	2.05	129	206
ELL XI BBS	2.29	85	147
Spontaneous utterances			
Transcription	MLU (tokens)	types	tokens
ELL I BBS	2.00	17	18
ELL VI BBS	2.22	92	160
ELL XI BBS	2.31	84	142

The Upper Bound of Elliot's utterances can be seen in tables 5.30–5.32.

Upper Bound of Elliot's spontaneous utterances

Table 5.30: Upper Bound of Elliot's English utterances

Age	PB/FC	Trans. length	UB	Types/tokens	Example	English translation
2;01.06	PB	9.00	2	4/7	stop that!	n/a
2;06.00	FC	15.30	4	6/6	my tea (i)s here.	n/a
2;11.20	FC	15.11	10	1	the Max the putted the costume on, then sai:l away.	n/a

Table 5.31: Upper Bound of Elliot's Swiss German utterances

Age	PB/FC	Trans. length	UB	Types/tokens	Example	English translation
2;01.01	PB	13.30	3	1	lug jetzt da.	look now there. (or 'here')
2;05.25	PB/FC	15.24	4	4/4	da(s) (i)sch blau (s)tä(r)n.	that is blue star.
2;11.20	PB	15.07	5	2/2	müsli isch zu gross ässe	little mouse is too big eat.

Table 5.32: Upper Bound of Elliot's French utterances

Age	PB/FC	Trans. length	UB	Types/tokens	Example	English translation
2;01.04	PB	15.47	4	1	ici c'est sa tête.	here it's its head.
2;05.28	PB/FC	15.02	7	1	là y+a un homme qui est là.	there there's a man who is there.
2;11.22	FC	15.00	9	1	et moi je veux jouer avec la grosse balle.	and me I want to play with the big ball.

Key: PB: looking at a picture book, FC: free conversation, UB: upper bound

The Upper Bound results reflect the tendencies seen in the MLU counts. In English, Elliot's longest spontaneous utterance is a two-word one at age 2;1, a four-word one at age 2;6, and a lengthy ten-word one at age 2;11 (note that this is inflated by two non-target usages of the definite article). In Swiss German, while the longest utterance is already three words at the beginning of the study, the longest utterance in the final set is only five words long. In French, Elliot already produces a four word utterance at age 2;1, a seven-word at 2;6 and a nine-word one at age 2;11. Note that all the longest utterances in French, unlike for English and Swiss German, conform to adult grammar. In the longest English utterance in ELL XI MOT, **the Max the putted the costume on, then sai:l away**, the use of the definite article does not conform to adult grammar (see section 5.2.3 for an analysis of this use of **the**). Further, there is an overgeneralisation of the -**ed** suffix on **put**, and a lack of inflection on the verb **sail**. In Swiss German, the longest utterance in ELL VI FAT is missing an article and the adjective is not inflected: DA(S) (I)SCH BLAU (S)TÄ(R)N 'that is blue star' (target: DAS ISCH EN BLAUE STÄRN, 'that is a blue+inflection star'). In ELL XI FAT, an article and an infinitive particle are missing: MÜSLI ISCH ZU GROSS ÄSSE 'little mouse is too big eat' (target: S MÜSLI ISCH ZU GROSS ZUM ÄSSE 'the little mouse is too big to eat').

According to the measurements of Mean Length of Utterance and Upper Bound, Elliot appears, at the beginning of the study, to be most proficient in French, then English, then Swiss German. By the end of the study, however, the order for French and for English is no longer clear. Even if the MLU counts suggest a higher proficiency in English, the Upper Bound measurement for French, as well as the target-like quality of his French utterances mean that such a conclusion would be premature.

Although not essential to the question at hand, it should nevertheless be mentioned that Lina's speech is sometimes characterised by a Gestalt style, a feature not seen in Elliot's speech. That is, not all of her utterances fall neatly into a one-word, two-word, etc., categorisation. In narrative mode, for example, when she is telling a story, or once when pretending to explain the instructions of a game (in LIN VI MOT), she utters long but largely incomprehensible utterances in a story-telling intonation. This is further

evidence of the problem of comparing MLUs across different children, since not only do they acquire language at different rates, they also, as pointed out above, may take different language acquisition paths.

A final note on the method used for the calculation of MLU and UB: in the end, the distinction between spontaneous and non-spontaneous speech for the calculation of the MLU seemed to be unimportant. It turned out that copied speech did not inflate the MLU scores. This was because quite a lot of non-spontaneous speech consisted either of one-word repetitions, or else lines from songs and rhymes, and these "formulaic" utterances had also been counted as one-word utterances. The distinction between spontaneous and non-spontaneous speech was thus only relevant for the calculation of the children's longest utterances, the Upper Bound.

5.2.2 Cross-linguistic influence: morphological

A further tool used to measure dominance, proposed by Petersen (1988), involves an examination of the co-occurrence of grammatical and lexical morphemes in word-internal mixes. Petersen hypothesises that we may find grammatical morphemes of the dominant language occurring alongside lexical morphemes of the non-dominant language, but not grammatical morphemes of the non-dominant language alongside lexical morphemes of the dominant language (p. 486). Thus, Petersen's Danish-English bilingual subject, aged three, who according to other measures was English-dominant, produced *vask*ING, 'washING', but never a construction like *WASH*er*, 'WASH*es*', (p. 483). The first mix contains a lexical morpheme from the non-dominant language and a grammatical morpheme from the dominant one. The second, hypothetical example has a lexical morpheme from the dominant language plus a grammatical one from the non-dominant one. The idea is that the dominant language may provide a grammatical frame for the non-dominant one, but not vice versa. Note that Petersen's actual examples include not only word-internal mixes but also phrase-level mixes e.g. HER *dukke*, 'her dolly' (p. 482). Petersen makes the important point that her subject was not exposed to such mixes in the language input (p. 480). This is also the case for Lina and Elliot – otherwise the measurement would not be

considered (see chapters six and seven for a detailed account of the adult input).

A discussion of the measurement can be found in Lanza (2004: 170–173). One point she makes is that the hypothesis can be extended beyond the word (or phrase) level (see the example below). Another point is that in using this measurement, the base language of the interaction needs to be established (this is not something mentioned by Petersen). For example, Elliot produces the mixed utterance DAS, **paper**, 'that, paper', which runs counter to the idea of the hypothesis proposed by Petersen (because here we have a grammatical morpheme of his weaker language combined with a lexical morpheme of his stronger language). However, he produces this utterance in a Swiss German language context, a context in which he is expected to speak Swiss German. Thus, Elliot begins the utterance with a demonstrative pronoun in the language expected, and mixes in an English lexical item when he – presumably – lacks the Swiss German term. It is a reasonable assumption that he lacks the term in Swiss German since firstly, as we have seen above, Elliot usually speaks Swiss German with his father, and secondly, the Swiss German word for 'paper' is never attested in Elliot's speech data.

Finally, Lanza notes that this measurement is useful as an overall representation of behaviour rather than as a rule which does not allow for exceptions. She concludes "that a *propensity* to use a certain directionality of mixing can be an indicator of dominance" (p. 173).[32]

Definitions: base language, mixing, mixed utterance, lexical mix, grammatical mix

Following Lanza (2004: 172), the base language of the child was determined according to the sociolinguistic parameter "context language", that is, the language the adult is speaking and attempting to impose. This is of course essentially a socially determined conception of the base language.[33] According

[32] See also Döpke (1998: 107) for a further discussion of this measurement. She suggests that differences in the richness of the inflectional morphology of the respective languages need to be taken into account when using the measurement since "dominance patterns and saliency of morphological marking may interact". However in giving counter examples from her own data, she does not take base language into account.

[33] See Lanza (2004: 171) for a discussion of other conceptualisations of base language.

to this perspective, any elements from the non-context language, including one-word utterances, may be considered mixes. This definition of mixing was also adopted in the present study. Note, however, that the specific analysis of directionality of mixing was limited to utterances in which elements from more than one language were present, that is, "mixed utterances".

With regard to the definition of lexical and grammatical mixes, mixes were classified as lexical if they consisted of a noun, verb (except 'be'), adjective or blend of any of these. If a lexical mix also included grammatical elements it was classified under lexical (Lanza 2004: 215). For example, Lina uttered the following in an English context: **thank you,** ANDERE SIITE ('other side'). The phrase, ANDERE SIITE was classified as a Swiss German lexical mix, where ANDERE is a grammatical element and SIITE a lexical one. All other mixes were classed as grammatical including copula 'be', since it was so often contained in chunked speech with another grammatical element e.g. *c'est* ('it is').

Note that a number of lexical items appear in the tables which are the same in both languages, e.g. *hand* (English and Swiss German) or *orange* (all three languages). As described in chapter four, such items were assigned according to the language of pronunciation; I have not found it necessary to also include the phonetic transcriptions of such words in the tables. The figures in the tables correspond to the columns of mixed utterances in tables 5.1 (LIN MOT), 5.4 (LIN FAT), 5.7 (LIN AUN), 5.10 (ELL MOT) and 5.13 (ELL FAT). They do not correspond precisely to those of table 5.16 (ELL BBS) for reasons explained in that section.

Directionality of mixing: Lina

Since it is already clear by other measures that Lina's dominant language is Swiss German, we would expect, according to the hypothesis proposed by Petersen, Swiss German grammatical mixes in Lina's French and English but not French or English grammatical mixes in her Swiss German. Let us start by looking at Lina's mixed utterances in conversation with her mother, that is, in a Swiss German language context. These are displayed in table 5.33 below. Note that the English translations in this section are literal, word-for-word translations.

Table 5.33: Lina's mixed utterances in Swiss German context

TR	Mixed utterance	English translation	FRE		ENG	
			G	L	G	L
I	E:IS, *huit*?	one, eight?		X		
III	DE *papillon*.	the butterfly.		X		
X	DE **birdie** GMACHT.	the birdie done.				2
X	AU *fourchette*.	also fork.		X		
XI	CHUE # **asleep**.	cow # asleep.				X
XII	MIN papa, *ça avec un* DE *clown*.	my daddy, that with a the clown.		X		
XII	*ça c'est* xxx MIN papa *clown*.	that its xxx my daddy clown.		X		
Total			0	5	0	3
Total according to language			5		3	
Total all				8		

Key: TR: transcription, G: grammatical mix, L: lexical mix

We see that in the entire mother-daughter corpus, only eight mixed utterances occur. Two of these cannot be counted as a mix from the perspective of the child, since they concern a family form (**birdie**, two tokens). Another token has been elicited (*fourchette*), since the mother was asking Lina the names of objects in French. Of the five mixed utterances left, two are lexical ones from French (*huit*, 'eight' and *papillon*, 'butterfly'), the other a lexical one from English (**asleep**). The final two mixes include both grammatical and lexical elements of French, and are no doubt topic-related: both utterances refer to something Lina has experienced with her father. Thus, we see no uniquely grammatical mixing of Lina's weaker languages into her stronger one. Since it has already been established that Swiss German is Lina's dominant language, we can observe that directionality of grammatical mixing in this case appears to be a sound measurement for dominance.

The following table shows Lina's mixed utterances in conversation with her father.

Table 5.34: Lina's mixed utterances in French context

TR	Mixed utterance	English translation	SWG		ENG	
			G	L	G	L
I	HALLO *la*(*pin*).	hello ra(bbit).	X			
II	JA *boule*.	yes ball.	X			
III	xxx *pou*(*dre*) # DA.	xxx pow(der) # there.	X			
III	DA *boule*.	there ball.	2			
IV	*ça c'est* BARBIE HALS.	that it's doll neck.		X		
IV	nÜ*f*.	blend: NÜN + *neuf*		X		
V	*l'aut*(*re*) SCHNÄGG.	the oth(er) snail.		X		
V	*ça* CHÄS, xxx.	that cheese, xxx.		X		
V	*ça* ÖPPIS, xxx, CHÄS.	that something, xxx, cheese.		X		
VI	<I AU> [/] I AU K*app*e*au*.	<I also> [/] I also hat. blend: KAPPE + *chapeau*		X		
VI	*c'est* **FISCH**.	it's fish.		?[34]		?
VI	I AU *ca* [/] *cad*(*r*)*es*.	I also fra [/] frames.	X			
VI	SCHNÄGG *bouteille*.	snail bottle.		X		
VI	I AU K*APP* [/] K*A* [/] K*APPeau*.	I also ha [/] ha [/] hat. blend: KAPPE + *chapeau*		X		
VII	ähm SCHMÄTTERLING *l'ours*.	um butterfly the bear.		X		
VII	xxx *ça* SCHIFAARE.	xxx that ski. [verb]		X		
VII	*dix* DAS DA.	ten that there.	X			
VII	nah ah, NID xxx *chat* DAS DA.	nah ah, not xxx cat that there.	X			
IX	E *mouche* DA DÖT SII.	a fly there there be.	X			
IX	*dit* **red**.	says red.				X
X	**HI**[35] [/-] *là*.	he [/-] there.	?		?	
X	ODE *à* Bään.	or in Berne.	X			
X	*et* ZUCKE.	and sugar.		X		
X	SO, *ou* SO.	like this, or like that.	X			
XI	DA: NÖD, MIT TÜPFLI, *et* OONI TÜPFLI, […]	there not, with dots, and without dots, […]		X		
XI	DA *là*.	there there.	X			
XI	*une tortue* IS WASSER.	a turtle in the water.		X		
Total			12	13	0	1
Total according to language			25		1	
Total all			26			

Key: TR: transcription, G: grammatical mix, L: lexical mix

In conversation with her father, Lina produces 25 Swiss German mixes in her French utterances. There is also one utterance containing an English element but this does not qualify as a mix from the perspective of the child, since it is a

[34] Ambiguous utterances are not included in the totals of the mixed utterance tables.
[35] Lina starts to say HIE (or **here**), then self-repairs.

repetition of part of an utterance of her father. In addition, Lina produces two Swiss German and English mixed utterances within the French language context which do not appear in the table; in both cases there is a Swiss German grammatical frame and an English lexical item:

III	oh DA **balloon**.	'oh there balloon.'
IX	UND JETZ xxx SEIT Shelly,[36] **(y)ellow**.	'and now xxx Shelly says, yellow.'

Of the 25 Swiss German mixes, twelve consist of Swiss German grammatical mixes into French. In the other thirteen cases we find lexical mixes from Swiss German, and in seven of these cases we find the pattern of French grammatical elements plus Swiss German lexical elements (the other six contain only lexical elements from both languages). These seven cases are listed below.

IV	*ça cest* BARBIE HALS.	'that it's doll neck.'
V	*l'aut*(*re*) SCHNÄGG.	'the oth(er) snail.'
V	*ça* CHÄS, xxx.	'that cheese, xxx.'
V	*ça* ÖPPIS, xxx, CHÄS.	'that something, xxx, cheese.'
VII	xxx *ça* SCHIFAARE.	'xxx that ski.'
X	*et* ZUCKE.	'and sugar.'
XI	DA: NÖD, MIT TÜPFLI, *et* OONI TÜPFLI, […]	'there not, with dots, and without dots, […]'

If we were to simply follow the hypothesis as Petersen (1988) presents it, namely that grammatical items from the non-dominant language do not occur with lexical items from the dominant language, we would be at a loss to explain these seven instances. However, once the context language is taken into account the picture looks different. We know that Lina usually produces utterances entirely in Swiss German in French-language context. Thus, when she does actually produce French-Swiss German mixed utterances, we may assume that she is trying to conform to the expectation that she speak French. When she cannot fulfil this expectation entirely, due to lexical gaps, she fills in the gaps from her stronger language, Swiss German. For this reason we can

[36] Lina's aunt.

observe sentences which begin with the French demonstrative *ça* or *ça c'est* only to be followed by a lexical item in Swiss German. The appropriate comparison, therefore, based on the expectations of the interaction, is:

- number of Swiss German grammatical mixes into French utterances in French context (i.e. in conversation with the father)

versus:

- number of French grammatical mixes into Swiss German utterances in Swiss German context (i.e. in conversation with the mother)

The ratio here is 12:0. Note that here and throughout, the figures also include utterances which contain only grammatical elements; in this case there are two: DA *là* ('there there') and SO, *ou* SO ('like this, or like that').

The following table shows Lina's mixed utterances in conversation with her aunt. In this table, only the mixed elements have been translated.

Table 5.35: Lina's mixed utterances in English context

TR	Mixed utterance	English translation	SWG		FRE	
			G	L	G	L
I	**bye bye** MUUS.	mouse		X		
II	EINER, **two**, LOS!	one, […], go		X		
V	UND **five**.	and	X			
VI	JA **eating**.	yes	X			
VI	**a** *mouche*.	fly				X
VII	**red** DAS DA.	that there	X			
VIII	SCHMÄTTERL**y**NG [...]	blend: SCHMÄTTERLING + **butterfly**		X		
IX	NEI I WOT **the monkeys**.	no I want		X		
X	**it's** WACH.	awake		X		
X	**the train** MIT.	with	X			
XI	**it's** BADE UND FLÜGE.	swim and fly		X		
XI	**happy** AU.	also	X			
XI	DEE **happy**.	he	X			
XI	XXX I BIN AU **happy**.	I am also	X			
XI	BI AU **happy**.	am also	X			
XI	BI **also happy**.	am	X			
XI	**doctor** WÄG.	away	X			
XII	NOMOL **red**.	again	2			
XII	ANDERE **side**.	other	3			
XII	**thank you**, ANDERE SIITE.	other side		X		
Total			15	7	0	1
Total according to language			22		1	
Total all			23			

Key: TR: transcription, G: grammatical mix, L: lexical mix

We observe here a single French lexical mix and 22 mixes from Swiss German. Fifteen of these are grammatical mixes e.g. DEE **happy** ('he happy'). Let us make the same comparison as above, namely:

- number of Swiss German grammatical mixes into English utterances in English context (i.e. in conversation with the aunt)

versus:

- number of English grammatical mixes into Swiss German utterances in Swiss German context (i.e. in conversation with the mother)

In this case, the ratio is 15:0.

In mixed English-Swiss German utterances, Lina's English clearly has a Swiss German grammatical frame. The example below reveals how entrenched this frame is. The exchange takes place when Lina is aged 3;01.05. Her aunt has successfully taught her the lexical item *happy*, but is finding it quite an effort to get the child to build an entire sentence around the item.

Example 5.7	**LIN XI AUN**
@Situation:	Looking at pictures
*AUN:	**is the blue balloon happy or sad?**
*LIN:	ähm **happy**.
*AUN:	**yeah.**
*LIN:	**happy.**
*AUN:	**oh yes, very happy. what are these? hm? look.**
*LIN:	mm **happy** AU.
%eng:	mm happy also.
*AUN:	**[>] <you're> +/.**
*LIN:	[<] <DEE **happy**>.
%eng:	he happy.
*AUN:	**two happy balloons? mhm. what about you, Lina, are you happy or sad?**
*LIN:	xxx I BIN AU **happy**.
%eng:	xxx I'm also happy.
*AUN:	**so, I:'m also happy. can you say that?**
*LIN:	BI AU **happy**.
%eng:	am also happy.
*AUN:	**I'm also happy.**
*LIN:	BI **also happy**.
%eng:	am also happy.

Despite her aunt's efforts, Lina never produces the complete sentence in English.

Note that two instances of the pattern English grammar + Swiss German lexis occurred in the conversations with the aunt:

X	**it's** WACH.	'it's awake'
XI	**it's** BADE UND FLÜGE.	'it's swim and fly'

As with her French *ça* and *ça c'est*, Lina begins her sentence in English with a grammatical construction she knows well (**it's**), then fills in the lexical items from her stronger language.

So long as the context language is taken into account, the results for Lina conform to directionality of grammatical mixing as an indicator of dominance, with no French or English grammatical mixes occurring in Swiss German-language context but twelve Swiss German grammatical mixes occurring in French-language context, and fifteen in English-language context.

Directionality of mixing: Elliot

In the case of Lina, her dominant language was already clear from other measures, so examining the directionality of grammatical mixing in her speech above all tested the validity of the measurement itself. However, in Elliot's case, it is not clear if he has a dominant language, so the measurement may be genuinely revealing for this question. Two questions are posed in this regard:

1) In a Swiss German-language context, are there more French or English grammatical mixes? That is, in mixed utterances when speaking his non-dominant language, does French or English tend to provide the grammatical frame?

2) Is there a marked difference in the number of French grammatical mixes in an English-language context compared to English grammatical mixes in a French-language context?

As the first question involves the speech data between Elliot and his father, the mixed utterances of this dyad will be presented first.

Table 5.36: Elliot's mixed utterances in Swiss German context

TR	Mixed utterance	English translation	FRE		ENG	
			G	L	G	L
I	[…][ˈbɛæ].	blend: **bear** [ˈbɛə] + BÄÄR [bæːr]				2
I	oh **yes** xxx TRAKTO(R).	oh yes xxx tractor.			X	
I	*c'est* HUND.	it's dog.	2			
I	*et c'est* MUU.	and it's moo.	2			
I	oh *c'est* (ELE)FANT**.**	oh it's elephant.	X			
II	[ˈbɛæ].	blend: **bear** + BÄÄR				2
II	*c'est* MUUS.	it's mouse.	X			
II	DE *monsieur*.	the man. (lit. 'mister')		X		
II	OONI *la* MAA.	without the man.	X			
V	[ʃʈɔːm]	blend: STURM [ʃʈʊrm] + **storm [**sʈɔːm**]**				X
V	*c'est* DAS euh PIRAT.	it's that er pirate.	X			
V	*ça c'est PI* [/] PIRAT DEE.	that it's pi [/] pirate he.	X			
V	*c'est qui* DAS?	it's who that?	X			
V	*c'est* DAS?	it's that?	X			
V	*c'est qui qui* ÄSSE?	it's who who eat?	X			
V	DA *c'est* DAS TIN [/] TINTEFISCH.	there it's that squi [/] squid.	X			
V	*c'est qui* DA?	it's who there?	X			
V	*c'est qui* DAS?	it's who that?	2			
V	*c'est* DAS?	it's that?	X			
V	SCHLANGE **loveys**.	snake loveys.				X
V	*c'est* DA?	it's there?	X			
VI	**ELFsE**[37] **didn't come.**	elves didn't come.				X
VI	DA **IS**[38] **hand**.	there is hand.				X
VI	DAS **hand**.	that hand.				2
VI	DA **hippo**.	there hippo.				X
VI	DAS ISCH **orange**.	that is orange.				X
VII	DE **orange**	the orange.				X
VII	SO[39] # **light**.	like this # light.				X
VII	DA(S) (I)SCH **orange**.	that's orange				X
VII	*attention* DAS+//.	careful the+//.		X		
VII	ah *où* DAS?	ah where that?	X			
VIII	DAS **doggy**.	that doggy.				X
IX	FÜ(R) BITTE [ˈbæɛ].	for please bear; blend: **bear** + BÄÄR				X

[37] **ELF** is the same in both languages. Here it is pluralised with both the English plural marker **-s**, and the Swiss German one -E.

[38] This word is pronounced with voiceless [s]: [ɪs] rather than English [ɪz]. In the Swiss German cognate, ISCH, the consonant is also voiceless: [ɪʃ]; the word is thus an ambiguous element, and therefore not coded as a mix.

[39] The context makes the meaning and therefore the language assignment of SO clear.

IX	UND MIT DE **football**.	and with the football.				X
IX	ISCH **a football** ich.	is a football I.				X
IX	ICH GA HOLE **spoon**.	I go get spoon.				X
IX	ICH EN **spoon**.	I a spoon.				X
IX	*et* SALAT.	and salad.	X			
IX	*c'est* DA.	it's there.	X			
X	D [/] DU &sh **catch it**, DRACHE.	y [/] you &sh catch it, kite.				X
X	**you** &s **try catch** GAA.	you &s try catch go.				X
X	DU **try catch** GAA?	you try catch go?				X
X	**you try catch** DU.	you try catch you.				X
X	<DU &sh> [/ /] DU **try catch**, dad?	<you &sh> [/ /] you try catch, dad?				X
X	DU SCHNELL **catch** GAA.	you fast catch go.				X
X	DEN ISCH [/] ISCH [/] (I)SCH # **catch**.	then is [/] is [/] is # catch.				X
X	**yes**, ISCH GANGE # DEN.	yes, is gone # then.			X	
X	**in a**[40] BLUEME.	in a flower.			X	
X	UND ER ÄSSE **sausage**.	and he eat sausage.				X
X	ICH LUEGE DE *coccinelle*.	I'm looking at the ladybird.		X		
XI	ÄS *clow:n*.	a clown.		X		
XI	*c'est* MINNI.	it's mine.	X			
XI	FESCHT *dodo*.	fast asleep.		X		
XI	DE ahm [/] DE [/-] *ma banane*.	the um [/] the [/-] my banana.		X		
XI	DAS, **paper**.	that, paper.				X
XI	UND papi MACHT **cereals**.	and daddy makes cereals.				X
XI	UND mami SAIT **egg**.	and mummy says egg.				X
XI	DAS **doggy dog**.	that doggy dog.				X
XI	UND **sausage**.	and sausage.				X
XI	mami SAIT **naughty**.	mummy says naughty.				X
XI	DAS ISCH **sausage**.	that is sausage.				X
XI	mami SAIT **sausage**.	mummy says sausage.				X
XI	VOM **him**.	from him.			X	
XI	UND Max ISCH **naughty**.	and Max is naughty.				X
XII	UND DA **is** [/] # **is** SÄX.	and there is [/] # is six.			X	
XII	DAS *aussi*.	that also.	X			
XII	DAS # *tomate*.	that tomato.		X		
Total			23	7	5	38
Total according to L			30		43	
Total all			73			

Key: TR: transcription, G: grammatical mix, L: lexical mix

[40] Although possibly a reduced form of the Swiss German INERE 'in a'.

The comparison between French and English grammatical mixes in Elliot's Swiss German is summed up below:

- number of French grammatical mixes into Swiss German utterances in Swiss German context (i.e. in conversation with the father)

versus:

- number of English grammatical mixes into Swiss German utterances in Swiss German context (i.e. in conversation with the father)

The ratio here is 23:5. Of particular interest is that most of the French grammatical mixes occur in the first five months of the study: 18/23. With the English grammatical mixes the opposite is the case: 4/5 grammatical mixes occur from month X on. It is interesting to observe that the largest number of mixes overall are English lexical ones. Reasons as to why this might be the case are explored in the following chapter (section 6.5). In sum, in the first half of the study, we can observe a predominantly French grammatical frame for mixed utterances occurring in the Swiss German language context, while in the second half of the study the picture is not clear.

Table 5.37 below shows Elliot's mixed utterances in conversation with his mother. As with the other English-context table (Lina and her aunt, table 5.35), only the mixed elements have been translated.

Table 5.37: Elliot's mixed utterances in English context

TR	Mixed utterance	English translation	FRE		SWG	
			G	L	G	L
I	**is** DAS **the mo** [/] **monster?**	that			X	
I	**is** DA.	there			X	
II	**n** [/] **naughty** DAS.	that			X	
II	*aussi* **go** XXX.	also	X			
II	**th**(**r**)**ee** # *dodo***s**.	sleep (noun)		X		
II	*ça* # **book**.	that	X			
II	*ça*, *ça* **mouse**.	that	X			
II	*c'est ça*, *c'est un* **mouse**.	it's that, it's a	X			
II	*ça c'est un* **mouse**.	that it's a	X			
II	oh **no** *c'est un* **mouse** # **hat.**	it's a	X			
II	*ça c'est* **book**.	that it's	X			
V	*c'est qui* **there?**	who is	X			
V	*c'est qui* **is that?**	who is	X			
V	MEE [/ /] uh **more**.	more			X	
VI	DA, **eat**.	there			X	
VII	*c'est* **mine**.	it's	X			
VII	**yeah**, *bison*.	bison		X		
VII	**is a** *bison*?	bison		X		
VIII	DU **bad me**.	you			X	
X	ISCH **whale**.	is			X	
X	ICH # euh [/-] # xxx **frog**!	I			X	
X	**I** XXX SCHWIMME.	swim (1 p.s.)				X
X	**you are a** SCH**wimmy** schw**og**[41]	swimmy frog				X
XI	**no with the book** *de la ferme* [?].	of the farm		X		
XI	**after** *sieste*.	siesta		2		
XI	UND [/] UND **all the animal** +...	and			X	
XI	**and the** ELCH.	elk				X
XI	DA, **this book**.	there			X	
XI	Daddy **says** [/ /] SEIT # SACK, SEIT **draw** XXX, UND DA **is** Micky Mouse **HERE**.	says sack, says […], and there				X
XI	um DU **also, and** ALLI [/] # ALLI +…	you […] all			X	
Total			10	6	11	4
Total according to L			16		15	
Total all			31			

Key: TR: transcription, G: grammatical mix, L: lexical mix

There are ten grammatical mixes from French in Elliot's English utterances. All six French lexical mixes may be discounted, since they are either family forms (*dodo*, *sieste*), or follow the use of the French word by the mother (*bison*, pronounced in French). Nine of the ten grammatical mixes occur in the first

[41] Pronounced as [ˈʃwɪmɪ ʃwɒg]. The first word is a blend of SCHWIMME + **swimmy.** The SCH element is the first consonant of any form of SCHWIMME [ˈʃʊɪmə] 'to swim'. Note that the second phoneme, spelt <w> in both languages, is the English [w] and not the Swiss German [ʊ]. The second word is an alliterative blend of the first word plus **frog**.

five months, which conforms to other indications of Elliot's dominance in French at the start of the study.

It is difficult to account for all the Swiss German grammatical mixes in Elliot's English within the "dominant-language hypothesis". Some of these mixes may be explained on structural grounds: two words in question (five tokens) are cognates with the English ones and are easier to pronounce than their English counterparts: DAS 'that' and DA 'there'. The alveolar stop [d] is one of the first consonants acquired in word-initial position (O'Grady 2005: 152–153) and may be considered easier to pronounce. Substituting [ð] with [d] (i.e. **dat**, **dere**) may trigger the entire production of the word in Swiss German. This might also explain the two instances of DU [dʊ] 'you' since [j] can also be considered a more difficult consonant. Thus these seven instances may be triggered by ease of articulation.

Finally, let us examine the data for Elliot and his babysitter. His mixed utterances in French language-context can be seen in table 5.38 below.

Table 5.38: Elliot's mixed utterances in French context

TR	Mixed utterance	English translation	ENG		SWG	
			G	L	G	L
I	**LOOK** *un ballon* xxx.	look a balloon xxx.		?		?
II	*ici c'est* **mouse**.	here it's mouse.		2		
II	DA *là*.	there there.			X	
II	ES *abeille*.	a bee.			X	
V	**and** DE UHU *est là*.	and the owl is there.	X			X
VI	mum *elle est* **outside**. [aʊtsəl'aɪd]	mum she is outside.	X			
VI	*là y a un* **chocolate.**	there there's a chocolate.		X		
VII	*mais* [/] *mais c'est* **hippopotamus**. [hɪˈpɒnebʊs]	but [/] but it's hippo-potamus.		X		
VII	E ROTE *tracteur*	a red tractor				X
VII	*ici*, DAS # *canard*.	here, that # duck.[42]			X	
VIII	DA(S) (I)SCH *rouge*.	that's red.			X	
IX	*et là*, **is** *comme ça*.	and there, is like that.	X			
IX	**or** # *comme ça*.	or # like that.	X			
IX	**LOOK** *comme ça.*	look like that.		?		?
IX	**LOOK** *là*.	look there.		?		?
X	**for** [//] *pour des grenouilles*!	for [//] for the frogs!	X			
X	**for a** *oiseau*.	for a bird.	X			
X	*c'est* **for a** # *oiseau*.	it's for a # bird.	X			
X	oh I WILL *un puzzle faire.*[43]	oh I want a puzzle to do.				X
X	WAS ISCH DAS DA *là*?	what is that there there?			X	
XI	**LOOK** *là*.	look there.		?		?
XI	**but** # *c'est pas* xxx *comme ça* xxx.	but # it's not xxx like that xxx.	X			
Total			8	4	5	3
Total according to language			12[44]		8	
Total			20			

Key: TR: transcription, G: grammatical mix, L: lexical mix

There are eight English grammatical mixes into French. One, however, is doubtful since Elliot self-repairs immediately to French (**for** [//] *pour des grenouilles*). The comparison between French grammatical mixes in English-

[42] The pause and intonation pattern has led me to interpret this utterance as a subject + predicate structure, i.e. 'that (is a) duck', rather than the noun phrase 'the duck' (see Montanari 2010: 77).
[43] The syntax of this utterance is discussed in the following section.
[44] The two language totals of 12 and 8 are higher than the totals 11 and 7 in table 5.16 since the trilingual utterance in set V has been counted twice.

language context and English grammatical mixes in French-language context is summed up below.

- number of French grammatical mixes into English utterances in an English context (i.e. in conversation with the mother)

versus:

- number of English grammatical mixes into French utterances in a French context (i.e. in conversation with the babysitter)

The ratio here is 10:8.

Let us now return to the two initial questions. First, in a Swiss German-language context are there more French or English grammatical mixes? And second, is there a clear difference in the number of French grammatical mixes in an English-language context compared to English grammatical mixes in French-language context? With regard to the first question, we have seen that in a Swiss German-language context we find 23 grammatical mixes from French and five from English. Most of the French ones occur in the first five months of the study (18/23), while most of the English ones in the last four months (4/5). The influence of English on Elliot's Swiss German therefore appears to become stronger in the second half of the study; however, according to this particular measurement, it is not stronger than French, since there are still five French grammatical mixes in the second half of the study (as opposed to four English ones). Concerning the second question, there is not a clear difference between the number of French grammatical mixes into English and the number of English ones into French, the ratio being 10:8 (or 7 if we exclude the repaired utterance). However, 9/10 French grammatical mixes occur in the first five months, while 6/8 English ones occur from month nine on. Taking both sets of results together, we see that the direction of the grammatical mixes indicates French dominance in the first half of the study while in the second half the importance of French and English seems to have evened out.

Finally, notice that, unlike for Lina, we can also observe grammatical mixes from Elliot's non-dominant language in the contexts of his stronger

languages. In French-language context five Swiss German grammatical mixes occur, while in English-language context we find eleven Swiss German grammatical mixes. I suggest that these results reflect the differences in levels of dominance between the two children. Lina is highly dominant in one language, while Elliot's trilingual language development is more even.

5.2.3 Cross-linguistic influence: syntactic, semantic and phonological

While the above analysis was concerned only with grammatical and lexical morphemes, the present section examines other types of cross-linguistic influence, namely on the levels of syntax, semantics and phonology.

With regard to the first type, only obvious examples of syntactic influence were considered. Patterns that happen to match the syntax of another language, but which might also occur due to the stage of language development of the child were not included. An example of this is Elliot's utterance *look me!* ('look at me'). This utterance happens to match the French syntax *regarde-moi*, but the lack of the preposition could also just as easily occur because he has not yet acquired the rule *look* + *at* + direct object.

Lina's speech data reveal very little cross-linguistic influence with regard to syntax. In Swiss German and English there is none. In French, there are two examples involving the Swiss German (and English) pattern of adjective + noun, instead of the French pattern noun + adjective. These are shown in examples 5.8 and 5.9. Note that here the translations are not in idiomatic English but are word-for-word so that the syntax can be observed.

Example 5.8 **LIN XII FAM**

*LIN:	ähm # *un couteau*.
%eng:	um # a knife.
*FAT:	*un couteau jaune?*
%eng:	a knife yellow?
*LIN:	mhm.
*LIN:	*un couteau jaune.*
%eng:	a knife yellow.
*FAT:	*et maintenant?*

%eng: and now?
*LIN: *vert # vert couteau*.
%eng: green # green knife.
%com: target syntax: knife green
*FAT: *un couteau vert, tiens*.
%eng: a knife green, here.

We see that in this instance, when her father provides the target pattern (*un couteau jaune*), Lina is able to repeat the exact phrase. However, when she produces an utterance with the same noun and a different adjective, she uses the Germanic pattern (*vert couteau*). In the second instance, below, Lina spontaneously uses the Germanic pattern (*vert fourchette*, 'green fork'). Here, however, after hearing and repeating the target pattern, she is also able to apply it to an utterance with a different adjective.

Example 5.9 **LIN XII FAM**
*FAT: *c'est quoi ça?*
%eng: it's what that?
*LIN: *vert chofette*.
%eng: green fork.
%phon: Lina means *fourchette* (metathesis)
%com: target syntax: fork green
*FAT: *la fourchette verte, oui.*
%eng: the fork green, yes.
*LIN: *fourchette verte.*
%eng: fork green.
*FAT: *mhm, et maintenant?*
%eng: mhm, and now?
*LIN: *fourchette # jaune*.
%eng: fork # yellow.

There were no examples of semantic cross-linguistic influence in the main data set for Lina. Phonological influence could be observed in just one direction, namely from Swiss German into French, and to a less obvious extent from Swiss German into English. One manifestation of phonological

transference could be heard in Lina's intonation when uttering di- or polysyllabic words in French. She places the stress clearly on the first syllable, as in Swiss German but unlike in French. Examples are *couteau* ('knife'), which is pronounced [ˈkuto] rather than the target [kuto], and *papillon* ('butterfly'), which is pronounced [ˈpɑpijɔ̃] rather than [papijɔ̃]. Another manifestation of Swiss German phonological transference could be heard in Lina sometimes not observing voiced/voiceless distinctions present in French and English but not in Swiss German. In Swiss German there are no voiced obstruents. Rather, a distinction exists between fortis and lenis obstruents. Schmid characterises the distinction thus: "*Fortis* (or 'strong') obstruents display a longer duration (and, possibly, a greater intensity), whereas *lenis* (or 'weak') consonants are significantly shorter and may have a lower intensity" (2010: 1). This feature could sometimes be heard in Lina's French, where, for example, *clown* [klun] was pronounced as [g̊lun] that is with a voiceless, lenis [g̊]. (The Swiss German word is pronounced [g̊lo:n].) In Lina's English, this lack of voiced/voiceless distinction could also sometimes be heard, for instance in the following example, where the second consonant of the word *dog* is not voiced. Instead of the target form, [dɒg], Lina produces [dɒg̊]. We see that in this example, Lina produces the target voicing with the first consonant, but not with the second.

In Elliot's case, we see the mirror image of what takes place with Lina, in interaction with his father, namely French noun + adjective patterns. The two examples below occur in the same interaction. Note that within this same recording, Elliot also spontaneously produces the target syntax.

Example 5.10 **ELL VI FAT**

*ELL: AFF ROT.

%eng: monkey red.

%com: target syntax: 'red monkey'

*FAT: AFF [/-] ROTE AFF. JAWOOL. BRAVO.

%eng: monkey [/-] red monkey. yes. bravo.

Example 5.11 **ELL VI FAT**

*FAT: JA, WAS ISCH DA? WÄR ISCH DAS?

%eng: yes, what is there? who is that?

*ELL: ÄM # TIGER # ROT.
%eng: um # tiger # red.
%com: target syntax: 'red tiger'
FAT: JA, ORANGSCH.
%eng: yes, orange.

Note that since the father's questions are: 'what is there?' and 'who is that?', the expected answer is a noun phrase and not a subject + predicate construction. For this reason, Elliot's utterance is interpreted as 'red tiger' and not as an ellipted form of 'tiger is red' with the pause between 'tiger' and 'red' marking a space for a verb.[45]

In addition, we also see the influence of French/English syntax in Elliot's Swiss German with regard to verb order. In (Swiss) German, non-finite verbs are placed in the final position of main clauses. For example, the equivalent of the English and French constructions **I want to buy the book** / *je veux acheter le livre* is in Swiss German: ICH WILL S BUECH CHAUFE ('I want the book to buy'). An example of verb order transference can be seen in example 5.12.

Example 5.12 ELL X FAT
*ELL: DE HUND TUET ÄSSE WURSCHT.
%eng: the dog does eat sausage.
%com: target syntax: 'the dog does sausage eat'

Two further examples of this syntactic pattern occur in this recording: TUET WÖSCHE HOO ('does wash hair', target syntax: 'does hair wash') and TUET ÄSSE BANANE ('does eat banana', target syntax: 'does banana eat'). Note that in other instances in the same recording Elliot spontaneously uses the target syntax, e.g. ICH TUE GONFI MACHE 'I do jam make'.

Concerning Elliot's English, we can observe the typically French pattern of pronoun resumption for emphasis.

[45] See Montanari (2010: 77) for a discussion of identification of such utterances.

Example 5.13 **ELL VIII MOT**

*ELL: **I want the stickers**.

*MOT: **I know you want stickers**.

*ELL: **I want stickers**.

*ELL: mum?

*ELL: **I want stickers, me**.

%com: pronoun resumption

This is a very common syntactic pattern in French but is not idiomatic in English. Another example can be seen in the same recording, when Elliot explains that he is not allowed to suck his thumb, and states: **I may not. I may not, me**.

An English utterance which reveals influence from Swiss German syntax is the one discussed at the end of section 5.2.1, in which we find two non-target uses of the definite article: **the Max the putted the costume on, then sai:l away**. The first non-target use, **the Max**, is clearly influenced by Swiss German. Personal names are preceded by definite articles in Swiss German in referring expressions: DE MAX (literally 'the Max') is the usual way of referring to someone called Max. Note that the pattern is also attested in colloquial French: *le Max*; however, in Swiss German it is the general rule. With regard to the second non-target use of **the**, this probably involves semantic transference from Swiss German and means 'he'. The masculine definite article DE ('the') in Swiss German and the demonstrative pronoun DEE ('this/that one' also with the meaning of 'he') only differ in length. Note that in colloquial German, this pattern is also common: der Max, der… 'Max, he…'. Thus, Elliot appears to have rendered 'he' as **the** following the (Swiss) German pattern.

In the French speech data for Elliot we find one example of syntactic transference, also from Swiss German. At the beginning of the recording with his babysitter (ELL X BBS), Elliot states: oh I WILL *un puzzle faire*, word-for-word 'I want a puzzle to do', meaning 'I want to do a puzzle'. Here, Elliot follows the (Swiss) German rule, described above, of placing the non-finite verb in the final position of the main clause. In this utterance, there is a lexical

mix from Swiss German (I WILL), and the rest of the utterance is in French but with Swiss German syntax.[46] It is of note that this is the first utterance of the exchange with the babysitter. The exchange takes place on a Sunday, three days after Elliot's last day of the week in French day care, and it is possible that Swiss German is still influencing Elliot's speech, i.e. he is not yet fully in French "language mode" (Grosjean 2001).

With regard to semantic transference, the only other example besides the one described above was French transference into English in the phrase **in the road** (three instances in ELL XII MOT) when Elliot is talking about finding a stone. The target expression in English would be **on the road**; Elliot's version corresponds to the French *dans la rue*.

Phonological transference was not obvious. Elliot's English did sometimes tend to have rather even syllable stress, for example his repeated and unmarked pronunciation of the word **medicine** was [ˈmedəˌsen] with both the first and last syllable stressed, the secondary stress being almost as intense as the primary stress. This is unlike the single stress of the target form(s), such as his mother's pronunciation of the word: [ˈmedɪsən]. Such pronunciations may be influenced by the stress pattern of French words (see De Houwer 2009: 173 for discussion of another example) since unmarked words in French have relatively even stress on each syllable, with slight final-syllable stress. However, such a stress pattern could also be attributed simply to his stage of language development. A likely case of French phonological influence was Elliot's pronunciation of **hard** as [ɑːd], so that his mother actually thinks he is saying **art** (both examples from ELL VIII MOT).

In sum, the instances of syntactic, semantic and phonological transference described above show only Swiss German (or Germanic) influence on Lina's other two languages, and largely French influence on Elliot's other two languages. In Lina's case, the picture of her dominance in Swiss German is

[46] The reader will recall that the context language, in this case French, was taken as the base for mixes, which is why I WILL ('I want') was considered as a mix into French. In another framework, different criteria might be used, e.g. the language an utterance starts in or the language of the conjugated verb, which, obviously, would result in a different interpretation of the mixing.

reinforced yet again, while in Elliot's case, the instances point to French dominance.

5.2.4 Self-talk

The language chosen by children when talking to themselves, as well as to their toys or pets, could be indicative of dominance, and for this reason an examination of self-talk was considered a relevant approach. However, self-talk is not easy to identify in audio recordings. In the data for this study, moreover, most of the conversations involve interactions in which the adults were very engaged with the child, leaving little room for self-talk.

Judging by various contextual clues, such as the quietness of the children's speech compared to their other utterances and the lack of response on the part of the adult, three instances of self-talk could be discerned. First, in a family recording, Lina's parents have been talking to each other and not to the child. Lina then starts quietly counting in French (LIN II FAM). Second, in conversation with her father, Lina at one point seems to be playing a role, since she specifically addresses herself by her own name, saying in Swiss German: 'What colour do you want Lina?'[47] Elliot also produces a turn of self-talk with three utterances each in a different language. In this recording, he and his babysitter are constructing something. After an exchange entirely in French with the babysitter about where a piece should go, Elliot's voice becomes considerably quieter, and he utters, apparently to himself:

Example 5.14 **ELL IX BBS**

*ELL:	**this is better xxx.**
*ELL:	VILIECHT DA.
%eng:	maybe there.
*ELL:	*oui*.

In the exchange between the babysitter and Elliot which follows this turn, Elliot's voice returns to its previous volume.

[47] See example 7.19, in chapter seven.

In addition, two further instances of the children addressing a doll or a pet could be observed. In the latter case, Lina can be heard singing a made-up song to her doll in Swiss German (LIN X MOT), while Elliot addresses the family cat several times in English (ELL VI MOT). Note, however, that both these language choices also match the context language.

Clearly these examples are too few for any conclusions to be drawn. The fact that Elliot addresses the cat in English when in conversation with his mother may say more about language choice according to context than according to dominance. The only example which seems revealing in any way is Elliot's use of all three languages in a single turn when talking to himself. This example, along with the rest of the measures for dominance, underlines the strong levels of language development in all three of his languages. A comment from Elliot's mother concerning self-talk further supports this: his mother pointed out that she noticed her son speaking Swiss German to himself following a week-long stay with his paternal grandmother (see also section 6.4 in chapter six).

5.2.5 Comprehension

This section takes a brief digression away from the children's language production and focuses on general comprehension. In the following discussion, since Elliot actually speaks all three languages, I will limit the discussion to Lina's two non-dominant languages, French and English. At this point, I would like to briefly recall the American–Danish family described in chapter one. During the interview, the Danish-speaking father, who followed the one person, one language principle, commented that he had the impression that his children did not always understand him. Recall also that Maneva (2004: 115) mentions that her daughter seemed not always to understand her father, although this was *after* the father had relaxed the 1P/1L rule (see summary of Maneva in chapter three).

According to her mother, Lina did not always understand the French spoken to her. She commented that her daughter sometimes seemed not to understand her father, and therefore ignored what he said. During my own observational visits, Lina did in fact appear to understand all the French

spoken to her, since she always reacted appropriately when her father addressed her. However, it must be pointed out that there was not much father-daughter conversation during these visits. In the recordings, there are no unequivocal instances of lack of comprehension. However, in one recording (LIN X FAT) there are some ambiguous instances; at the beginning of this recording, the child responds to the first three questions of her father with: hä? ('huh'?). There are of course also occasions in the recordings when Lina ignores what her father says. But in those cases, it is impossible to know whether this is due to lack of comprehension or not – unlike in face-to-face interaction, where incomprehension is sometimes registered in the facial expression.

By contrast with the above, there is much evidence in the recorded data that Lina does understand the French spoken to her. Firstly, she generally answers her father appropriately in terms of content, and secondly, she makes frequent use of translation equivalents, that is, she translates what has been said to her in French into Swiss German. I give an example of this in 5.15 below; in the data there are many more.

Example 5.15 LIN X FAT

@Situation:	Lina's father is suggesting to Lina what she could tell her mother when her mother comes home.
*FAT:	*tu vas dire à maman quand elle vient, oui, <que tu as> [///] que tu n'avais pas peur du chien, que t'as caressé le chien?*
%eng:	are you going to tell Mum when she comes, yes, <that you> [/ /] that you weren't scared of the dog, that you patted the dog?
*LIN:	ST(R)IICHLE.
%eng:	pat.

In this example we see that Lina picks out the important word for her, *caresser* ('to pat'), and translates it into Swiss German, STRIICHLE.

Where English is concerned, Lina's aunt felt that Lina understood everything she said to her. This was indeed the case when I observed them together. Lina

also understood most of what I said to her in English. However, just as Lina's mother had observed for French, I had the impression that occasionally the child did not understand, and therefore simply ignored what I had said. (Note that this is not surprising since I speak a different variety of English to both her aunt and her father.)

In the recordings, just as with French, Lina answers her aunt appropriately and makes frequent use of translation equivalents. An example is given in 5.16 below.

Example 5.16 **LIN VIII AUN**

@Situation:	Lina's aunt is getting her to name objects
*LIN:	KAPPE.
%eng:	cap.
*AUN:	**yeah it's a hat. Shelly says hat.**
*LIN:	JA HUET.
%eng:	yeah hat.

In this example, the aunt corrects Lina's use of Swiss German but in her correction she uses a term with a slightly different meaning (**hat** rather than **cap**). Lina accepts Shelly's different term for the item in question, but rather than repeating it in English, she translates it into Swiss German. The child focuses on semantics rather than choice of language.

With regard to Lina's aunt in particular, we do need to bear in mind the phenomenon of speech accommodation; by this I mean here, the extent to which an interlocutor may simplify their speech to accommodate to the child's weaker skills in a particular language. The example above is typical of the didactic conversational style of Lina's aunt, an issue which will be discussed in detail in chapter seven. It is quite possible that the aunt accommodates more to Lina than she would to a child dominant in English, and that this is why Lina understands her so well. However, whether or not this is the case is unanswerable with the present data. Thus, we must simply bear the caveat in mind when considering the evidence in the data. The evidence, to sum up, is the following: according to Lina's mother, her

daughter's comprehension of French is not of the same level as that of her Swiss German; and according to my own observations, the same could be claimed for Lina's English. Nevertheless, we have a great deal of evidence from the recordings that, overall, Lina understands well both the French and English spoken to her.

5.2.6 Parents' views

Since from the beginning of the study Lina's dominance in Swiss German was clear, the issue was not much discussed with the parents. Lina's aunt felt the child was more dominant in English than French throughout the study. She believed that the child made more effort to speak it, took pleasure in being able to speak it, and spoke it more proficiently. The aunt pointed out that Lina specifically stated that she could speak English. This is also heard in one of the recordings. After a long interaction in which Lina is repeating the names of objects in English, she exclaims in Swiss German to her aunt:

Example 5.17 **LIN X AUN**

*LIN: I TUE ÄNGLISCH REDE!

%eng: I'm speaking English.

*AUN: **I know you're speaking English, good job**.

The question of Elliot's language dominance was raised in the first interview with both parents at the beginning of the study. Both agreed that Swiss German was his least dominant language. His father thought that French was probably his dominant language, while his mother wasn't sure, and thought it could possibly be English. She also mentioned, however, that she hardly ever heard him speak French.

5.3 Conclusion

We have seen that Lina produces a great deal of her mother's language, some of her aunt's language (and parents' lingua franca), and comparatively little of the father's language. According to the various measures used, her order of dominance is the same, namely Swiss German, then English, then French.

With regard to the two proficiency measurements, Mean Length of Utterance and Upper Bound, Lina's MLU for her spontaneous utterances in Swiss German went from 1.57 words in the first recording with her mother to 2.77 in the eleventh. In English, in the equivalent sets, her MLU went from 1.00 to 1.29, while in French it remained at 1.00. In the final set examined (XI), Lina's longest spontaneous utterance in Swiss German comprised six words; in English, her longest spontaneous utterance was two words, and in French one.

Concerning the directionality of grammatical mixing measurement, in Swiss German language context we find no French or English grammatical mixes, while in French and English contexts we find only Swiss German ones. Syntactic and phonological transference could only be observed from Swiss German into Lina's other two languages.

It was shown that Lina understands the French and English spoken to her well, although both her mother and the investigator had the impression that her level of comprehension for these two languages was not quite as high as that of her Swiss German. The instances of self-talk are too few for any conclusions to be drawn, but I nevertheless reiterate them here for the sake of completeness: one instance of Swiss German in Swiss German-language context, one instance of Swiss German in French-language context, and one instance of French in mixed-language context (with both parents together).

There was no doubt, even before the speech data were analysed, that Lina was dominant in Swiss German. Not clear, however, was her relative proficiency in French and English – although her aunt believed that she was more proficient in English. The measurements used illustrate clearly Lina's high dominance in Swiss German, and reveal her greater linguistic proficiency in English compared to French.

Turning now to Elliot, we have seen that he produces all of his interlocutors' languages most of the time. According to the measures used to ascertain his language dominance, the order is French, then English, then Swiss German in the first half of the study. In the second half of the study, French and English

appear to be equally dominant, while the position of Swiss German remains the same.

Concerning the proficiency measurements, Elliot's MLU for spontaneous utterances in English went from 1.32 words in the first recording with his mother to 2.92 in the eleventh. In Swiss German, for the equivalent sets, his MLU went from 1.19 to 2.07, while in French, his MLU already started at 2.00 and was 2.31 in the eleventh recording. In the three sets examined (I, VI, and XI), Elliot's longest spontaneous utterances in English comprised two words, then four words and then ten words (the last, however, being a non target-like utterance). In Swiss German, the longest utterances comprised three, then four, then five words (the last two utterances both non target-like), while in French, they went from four, to seven, to nine words (all target-like utterances). According to the MLU measurement alone, one might in fact be tempted to claim that Elliot is *more* dominant in English than French by the end of the study. However, further measurements do not support this claim.

Like the MLU and upper bound measurements, the directionality of grammatical mixing results showed clear French dominance in the first half of the study but a less clear picture in the second half. From set VI on, we find more English grammatical mixes in Elliot's French than French ones in his English – suggesting English dominance. Yet in the same period, when Elliot is in conversation with his father, he mixes a similar number of French and English grammatical elements into his Swiss German (five versus four). Further, an examination of transference on other linguistic levels (syntactic, semantic, and phonological) shows mainly French influence on Elliot's other two languages. Thus, taking into account the results of all these measurements, it seems safe to claim that Elliot is equally dominant in French and English in the second half of the study.

Indeed, Elliot's levels of dominance in all three languages are far closer than those of Lina – a fact underlined by the instance of him speaking to himself in English, Swiss German and French all within a single turn (example 5.14). In the following chapters, I seek to account for why this is the case. The rest of

this study is devoted to the question of why the children's trilingualism has developed in the way it has.

6
Contextual Factors I

6.0 Introduction

In chapter two, a number of factors were identified as being potentially important for the promotion of active bilingualism. These factors were further discussed, and adapted, in chapter three with regard to active trilingualism. The points discussed at the end of chapter three were:

1. consistency in following the one person, one language strategy
2. amount of input
3. language constellations
4. variety of contacts
5. variety of media (and stimulating linguistic environment in general)
6. parental discourse styles (especially insisting strategies)
7. parent is linguist-investigator
8. status of the languages involved

Now that we have seen the trilingual development of Lina and Elliot, these factors will be discussed in an attempt to account for the language acquisition paths that the two children have taken.

The present chapter examines the relevance of the first four factors, as well as the final one. As with the trilingualism studies already discussed, the fifth factor, variety of media (as well as the idea of fostering a stimulating linguistic environment in general) did not appear to be much of an issue. It was not mentioned by the parents in this study and did not appear to be consciously promoted. This point therefore will not be taken up. The sixth factor, parental discourse styles, will be discussed in the next chapter. The analysis of adults' discourse styles and the children's responses to them is complex and lengthy, and thus an entire chapter is devoted to it. The seventh point, parent is linguist-investigator, will also be briefly addressed in chapter seven.

6.1 Consistency in following the one person, one language strategy

It was pointed out in chapter four that the six adults concerned follow the one person, one language strategy. In the following, I provide figures which illustrate the extent to which the strategy is adhered to. Each turn of each adult was coded for language. Considering the far greater amount of speech produced by the adults compared to the children, it was not considered necessary to code every utterance for language; the figures for the number of turns are already high. The adults' production of the different languages is presented in tables 6.1–6.6 below. Only the seven basic varieties described in 4.3 are given. The rare instances of further language choices not covered by these seven categories (e.g. the use of Standard German) as well as any ambiguous or incomprehensible turns were left out of the figures. Note that in three of the tables the percentages do not add up to precisely 100% due to rounding.

Table 6.1: Language used in turns of Lina's mother

Set	E	F	S	EF	ES	FS	EFS	Total
I	0	0	85	0	0	0	0	85
II	0	0	81	0	0	0	0	81
III	1	0	73	0	0	3	0	77
IV	0	0	78	0	0	0	0	78
V	0	0	91	0	0	1	0	92
VI	0	0	96	0	0	0	0	96
VII	0	0	61	0	0	0	0	61
VIII	0	1	64	0	0	0	0	65
IX	0	0	80	0	0	0	0	80
X	1	0	92	0	5	1	0	99
XI	0	0	65	0	2	0	0	67
XII	0	0	89	0	0	0	0	89
Total	2	1	955	0	7	5	0	970
%	0.21	0.10	98.45	0.00	0.72	0.52	0.00	100.00

Table 6.2: Language used in turns of Lina's father

Set	E	F	S	EF	ES	FS	EFS	Total
I	0	55	0	0	0	4	0	59
II	0	54	5	0	0	9	0	68
III	0	54	0	0	0	5	0	59
IV	0	94	0	0	0	16	0	110
V	0	71	11	0	0	19	0	101
VI	0	99	1	0	0	14	0	114
VII	0	92	1	0	0	6	0	99
VIII	0	80	1	0	0	2	0	83
IX	5	64	0	1	0	1	1	72
X	0	85	2	0	0	1	0	88
XI	0	62	1	0	0	0	0	63
XII	0	66	1	0	0	0	0	67
Total	5	876	23	1	0	77	1	983
%	0.51	89.11	2.34	0.10	0	7.83	0.10	99.99

Table 6.3: Language used in turns of Lina's aunt

Set	E	F	S	EF	ES	FS	EFS	Total
I	127	0	0	0	1	0	0	128
II	66	0	0	0	0	0	0	66
III	45	0	0	0	0	0	0	45
IV	64	0	0	0	0	0	0	64
V	97	0	0	0	1	0	0	98
VI	108	0	0	0	0	0	0	108
VII	81	0	0	0	0	0	0	81
VIII	131	0	0	0	1	0	0	132
IX	105	0	0	0	0	0	0	105
X	134	0	0	0	0	0	0	134
XI	90	0	0	0	1	0	0	91
XII	114	0	0	0	0	0	0	114
Total	1162	0	0	0	4	0	0	1166
%	99.66	0	0	0	0.34	0	0	100.00

Table 6.4: Language used in turns of Elliot's mother

Set	E	F	S	EF	ES	FS	EFS	Total
I	78	0	0	2	1	0	0	81
II	105	0	0	14	0	0	0	119
V	130	1	0	4	0	0	0	135
VI	92	1	0	0	0	0	0	93
VII	116	1	0	14	0	0	0	131
VIII	125	1	0	0	2	0	0	128
IX	106	0	0	0	0	0	0	106
X	100	0	0	1	0	0	0	101
XI	113	0	0	2	1	0	0	116
XII	121	0	0	1	0	0	0	122
Total	1086	4	0	38	4	0	0	1132
%	95.94	0.35	0	3.36	0.35	0	0	100.00

Table 6.5: Language used in turns of Elliot's father

Set	E	F	S	EF	ES	FS	EFS	Total
I	0	0	112	0	1	2	0	115
II	0	0	144	0	2	5	0	151
V	0	0	169	0	3	1	0	173
VI	1	1	171	0	6	3	0	182
VII	0	0	200	0	1	3	0	204
VIII	0	0	187	0	0	3	0	190
IX	0	0	177	0	3	0	0	180
X	0	0	154	0	2	2	0	158
XI	0	0	158	0	12	5	0	175
XII	0	0	135	0	1	0	0	136
Total	1	1	1607	0	31	24	0	1664
%	0.06	0.06	96.57	0	1.86	1.44	0	99.99

Table 6.6: Language used in turns of Elliot's babysitter

Set	E	F	S	EF	ES	FS	EFS	Total
I	0	96	0	0	0	0	0	96
II	0	90	0	0	0	0	0	90
V	0	236	1	0	0	1	0	238
VI	0	206	0	4	0	0	0	210
VII	0	153	0	0	0	0	0	153
VIII	0	76	2	0	0	0	0	78
IX	0	52	1	0	0	0	0	53
X	1	153	0	2	0	0	0	156
XI	0	105	0	0	0	0	0	105
Total	1	1167	4	6	0	1	0	1179
%	0.08	98.98	0.34	0.51	0	0.08	0	99.99

An overview of the percentages of turns each adult produces in their native language can be seen in table 6.7 below.

Table 6.7: Percentage of turns of caregivers exclusively in native language

Caregiver	Percentage of turns
Lina's mother	98.45%
Lina's father	89.11%
Lina's aunt	99.66%
Elliot's mother	95.94%
Elliot's father	96.57%
Elliot's babysitter	98.98%

In connection with these results, I would like to consider two observations about adherence to the one person, one language strategy made by De Houwer and Cruz-Ferreira. De Houwer cautions that "a 1P/1L setting may be an ideal rather than 100% reality" (2009: 113), while Cruz-Ferreira states: "It is, I would argue, impossible not to mix in a multilingual environment" (2006: 20) – and of course a trilingual family situation is very much a multilingual environment. In the light of these observations, the figures for language consistency in the child–adult dyads can be considered very high for five of the six interlocutors, being between 95.94% and 99.66%, and still fairly high for the sixth at 89.11%.

We see, therefore, a high level of adherence to the one person, one language strategy on the part of the caregivers, yet we observed, in the preceding chapter, a low level of active trilingualism on the part of one of the children. We noted in chapter five that Lina produces, in particular, very little of her paternal language, French. Considering the language production results, we also see that her father is less consistent in his application of the one person, one language strategy than the other adults. This slightly lower figure does not have to be of relevance *per se*. We will see in the following chapter that a switch into the non-context language can also be used as a strategy for promoting trilingualism, for example to elicit vocabulary in the non-dominant language or else to engage in metalinguistic discussion. However, as we will also see in the following chapter, such code switching for didactic purposes is

not typical of Lina's father;[48] on the contrary, the analysis reveals that his use of Swiss German is often the result of accommodating to his daughter's use of that language.

Analysis of the interactions further reveals that while the children have clearly internalised the one person, one language rule for their caregivers, this does not automatically mean that they feel they have to use the same language back. These aspects can be observed in the following examples. First, examples 6.1, 6.2 and 6.3 illustrate the extent to which the children have internalised the one person, one language rule for the adults. Example 6.4, on the other hand, shows how Lina does not feel that the one person, one language setting obliges her to use the language of her father. Note that these examples are a selection, and quite a few more occur in the data. In the first example, we see how Lina has internalised her aunt's and her parents' expression: *what does Shelly say?* and uses it herself, translated into Swiss German, in conversation with her mother.

Example 6.1	**LIN XI MOT**
*LIN:	BLAU.
%eng:	blue.
*LIN:	SAIT SHELLY DAS?
%eng:	Shelly say that?
%com:	ellipted form for 'how does Shelly say that?'
*MOT:	JA, [>] <XXX>.
*LIN:	**[<] <blu:e>.**
*MOT:	**blu:e**, JA. GENAU. UND <WIE SAIT> [/] WIE SAIT SHELLY DA?
%eng:	yes. exactly. and <how does> [/] how does Shelly say that?
*LIN:	**(y)ellow.**

The next example also illustrates how well Elliot has learnt the language division.

[48] An exception, however, can be seen in example 6.6.

Example 6.2 **ELL XI FAT**

*FAT: WAS ISCH DAS? WAISCH NA WIE S HAISST?
%eng: what's that? do you still know what it's called?
*ELL: **egg**.
*FAT: **egg**. JA, mami SAIT **egg**, UND papi SAIT EI:.
%eng: egg. yes, mummy says egg, and daddy says egg.
*ELL: EI.
%eng: egg.
*FAT: JA, DAS ISCH RICHTIG, DASCH ES EI. GANZ RICHTIG.
%eng: yes, that's right, that's an egg. quite right.
*ELL: UND mami SAIT **egg**.
%eng: and mummy says egg.
*FAT: JAWOOL, DAS ISCH RICHTIG. SEER SCHÖN.
%eng: yes, that's right. very nice.

In the following example, moreover, Elliot makes a comment when his father does not respect the established language division:

Example 6.3 **ELL XI FAT**

*FAT: NEI, DASCH NÖD GUET. DASCH **naughty**, HÄ?
%eng: no, that's not good. that's naughty, huh?
*ELL: **naughty**.
*FAT: JA. UND [>] <TÜND> +/.
%eng: yes. and [>] <they do> +/.
*ELL: [<] <ma>mi SAIT **naughty**.
%eng: mummy says naughty.
*FAT : JA, mami SAIT **naughty**, JA.
%eng: yes, mummy says naughty, yes.

Such a sensibility to the one person, one language strategy was already described by Ronjat in 1913 (p. 85), when his son corrected his mother for not using the appropriate language, namely German. In this interaction, the French-speaking cook had brought them a dish which Louis didn't know the name of. He asked his mother in German what it was called: "Mami, das

heisst...?". His mother gave him the name of the dish in French "gratin de courge", whereupon Louis responded "Nein, das heisst Kürbis".[49]

However, as stated above, the fact that the one person, one language strategy is used by the caregivers does not automatically mean that children feel they have to use the same language back. Certainly Lina does not seem to see the one person, one language rule in this light. This can be seen in the following example, in which Lina's father is asking her to name the colours of objects.

Example 6.4 LIN IX FAT

*FAT:	*quelle couleur il a le pot là*?
%eng:	what colour is that pot there?
*LIN:	ÄHM GÄUB.
%eng:	um yellow.
*FAT:	*jaune!*
%eng:	yellow.
*LIN:	*jaune*.
%pho:	[ʒ̊on]
*FAT:	*voilà. et celui-là?*
%eng:	right. and that one?
*LIN:	UND JETZ xxx SAIT Shelly, **(y)ellow** [!].
%eng:	and now xxx Shelly says, yellow [!].
%pho:	yellow: [ælɔɪ]
%com:	15 turns omitted; they have now turned their attention to a new object and comment that Shelly uses the colour term **red** for it.
*LIN:	**red**.
*FAT:	*oui. et en fr [//] dit plutôt en français. c'est rouge Lina*.
%eng:	yes. and in Fr [/ /] say it rather in French. it's red Lina.
*LIN:	PA [/ /] MAMA SEIT DEE # ROT.
%eng:	da [/ /] mummy says (for) that # red.
*FAT:	*aha. et Lina elle dit comment?*
%eng:	aha. and what does Lina say?

[49] 'Mummy, that's called...?' 'squash gratin' 'No, that's called squash.'

*LIN: ÄHM # ROT [!]
%eng: um # red [!]
*FAT: *elle dit* ROT? *non Lina elle dit rouge. tu parles le français non?*
%eng: she says red? no Lina says red. you speak French no?
*LIN: xxx *rouge*.
%eng: xxx red.

In the first sequence, we see Lina comparing her father's colour term, *jaune*, with that of her aunt, **yellow**. In the second sequence, she then gives her mother's term for 'red', namely ROT. However, when it comes to her own term for 'red', despite the fact that the context language is French, Lina states emphatically that she herself uses the Swiss German term. Only at her father's insistence does she produce the term in French. I observed the same logic during one visit to the family, when Lina was 3;01.12. Lina and I were playing with a knitted toy snake together, and I pointed out that I called the object a snake. Lina then informed me: **I say** SCHLANGE, DU **say** SCH**nake**. Lina thus seems to carry the one person, one language rule further in the sense that everyone indeed has a particular language that they speak and that hers is Swiss German.

Thus, while we see evidence of metalinguistic awareness on the part of the children inspired by the use of the one person, one language strategy, we do not see a correlation between the maintenance of the one person, one language principle and the children's language production. In Kazzazi's study (2007), we can observe a similar phenomenon: adherence to the one person, one language strategy appeared to foster metalinguistic awareness in her young subject, but, as with Lina, the child had low levels of active trilingualism. Recall also that Döpke (1992) found a high level of consistency among the German-speaking parents in Australia in following the one person, one language principle, yet only two of the six children in her study were actively bilingual.

Besides language choice in dyads with the child, the parents' language choices to the children in situations when both parents were present, as well as the parents' choice of language to each other, was examined. It will be

recalled that both families stated that English was the language of communication between the parents. On visits to the families this pattern could indeed be observed. This could also be heard whenever one of the parents briefly said something during the dyadic recording being made by the other parent. Besides these observations, I decided to look at one family transcription each, namely the final ones, LIN XII FAM and ELL XII FAM.

The family recording with Lina takes place after dinner. Lina is playing with some toy cutlery and her parents are alternatively talking to her and discussing a letter written in Standard German which they have received. Lina's mother addresses Lina's father in English, except in the following cases: quoting Lina, reading and quoting from the letter in Standard German, and continuing to use Swiss German with the father after just having addressed Lina. I give an example of the latter below.

Example 6.5 LIN XII FAM

@Situation: Lina has just asked whether they still have a certain library book.

*MOT: JA:, S ISCH IR SCHTUBE, DAS HEI MER NID ZRUGGBRACHT, MER HEI NU NA DS FLORA XXX ZRUGGBRACHT UND DASCH E FÄÄLER GSI, [now addresses father] GESCHTER HET SI GANZ FESCHT GRÄNNET WO DS FLORABÜECHLI FURT ISCH GSI. [3 secs] **But she [!] decided, she decided # big books are going back.**

%eng: yes, it's in the living room, we haven't taken it back, we only took Flora xxx back and that was a mistake, [now addresses father] yesterday she cried really hard when the little Flora book was gone.

The speech in Swiss German from the word GESCHTER ('yesterday') is clearly addressed to the father. The intonation is that of unmarked adult speech and does not indicate that Lina's mother might be talking to her daughter using the third person. Here, and in one other instance, the force of the language just spoken seems to carry over for a short time until the family policy of speaking English to the partner takes over.

Lina's father also usually addresses the mother in English, the only exceptions being to quote the letter in Standard German, and to use Swiss German once to underline a point about his ability to speak it. It is of note that deviations from the policy of using English with each other in this recording are always in the direction of the community languages, namely Swiss German and Standard German, the languages both of them need in their daily lives.

With regard to the parents' language choice to Lina in this triadic situation, Lina's mother always addresses her daughter in Swiss German, except for once in Standard German, and her father always addresses her in French except when he code-switches in one sequence in order to try and point out that she has not used the appropriate language with him. This can be seen in the example below.

Example 6.6 **LIN XII FAM**

@Situation:	Father and daughter are playing with coloured toy cutlery. The father asks which piece she wants.
*FAT:	*qu'est-ce que tu <veux> [>]?*
%eng:	what do you want?
*LIN:	**[<] <PINK>.**
*FAT:	*on n'a pas* **PINK**.
%eng:	we don't have pink.
*LIN:	**PINK**.
*FAT:	*il y a pas* **PINK**.=
%eng:	there's no pink.
*LIN:	*=rose!*
%eng:	pink.
*FAT:	*Ah rose!*=
%eng:	Ah pink!
*LIN:	=ROSAROT.
%eng:	pink.
%com:	both **PINK** and ROSAROT are today used in Swiss German
*FAT:	*et # <qu'est-ce que tu veux>* [/] *qu'est-ce que tu veux en rose*?
%eng:	and # <what do you want> [/] what do you want in pink?
*LIN:	ÄHM # MÄSSER.

%eng: um # knife.
*FAT: *y a pas* MÄSSER.
%eng: there's no knife.
*LIN: HIE &S GLAUB MÄSSERLI.
%eng: here &s (I) think little knife.
*FAT: *non. il y a pas. y a pas de* MÄSSERLI.
%eng: no. there's none. there's no little knife.
*LIN: DA.
%eng: there.
*LIN: SCHO.
%eng: there is.

As for Lina, she always addresses her mother in Swiss German except for two utterances containing French. She addresses 28 utterances to her father in French, and fifteen to him in Swiss German.

In sum, on the part of Lina's parents we see a fairly consistent use of English as a lingua franca, exceptions being activity-bound (reading and discussing a letter which is written in a language other than English), to quote or for emphasis, and occasionally in the case of addressing a new interlocutor but remaining for a moment in the language used with the previous interlocutor. Interestingly, Lina uses comparatively more French with her father here than in any of the dyadic conversations. It all occurs in an eight-minute sequence (from which the example above is taken) in which her father is asking her the names and colours of her toy cutlery, something she has practised before. This elicitation session will be discussed again in section 8.3.

Let us turn now to the family recording with Elliot. In this recording, Elliot and his older brother are putting on an impromptu play for their parents. With regard to the language choice of the parents, Elliot's mother only speaks English; his father only uses English with the mother, and only English when addressing everyone at once. He uses only Swiss German when addressing Elliot, and usually uses Swiss German when addressing Elliot's brother (there are two turns in English). When addressing both boys he almost always uses Swiss German (one turn contains some English). Finally, there are two further

turns in which it is unclear who he is addressing (one in English, one in Swiss German).

As for the children, Elliot mostly speaks English to his mother (there are two utterances containing Swiss German) and always speaks English to both parents together. He only speaks Swiss German to his father. Elliot's brother only speaks English to the mother and to both parents together, and mainly speaks Swiss German to the father. The brothers speak English and Swiss German to each other. Among Elliot's utterances addressed to his brother, there are nineteen in English, eleven in Swiss German, and one mixed English-Swiss German utterance. The proportion is similar for Elliot's brother to Elliot: 43 utterances are in English, 27 in Swiss German, two in Standard German and one is a mixture of French and Swiss German.

Thus we see, as with the language choices within the child–adult dyads, high consistency in the parents' language use. We can observe the same thing with the children: even during the challenging task of simultaneously creating and performing a play, the young boys choose their languages appropriately according to interlocutor. They almost always use the language of the parent with that parent, and always English to both parents together. To each other the boys use approximately two-thirds English and one-third Swiss German.

To conclude, with regard to the language the parents use with each other, we can observe in these two family recordings complete consistency on the part of Elliot's parents, and a fair amount of consistency on the part of Lina's parents, although with some use of the community languages. We can also observe that the parents remain unswerving in their use of the one person, one language rule with their children, even in these considerably more complex situations.

Sibling language choice

Let us now briefly take a closer look at what languages Elliot's brother uses with him. Elliot and his brother clearly do not follow the one person, one language principle. They do not maintain one particular language with each

other but choose their languages according to the context. We see this in the family recording described above, where 59% (43/73) of the brother's utterances addressed to Elliot are in English and 37% (27/73) are in Swiss German. In ELL IX MOT, where the boys are alone with their mother, 96% (130/136) of Elliot's brother's (language-assignable) utterances are in English, the context language. (Note that these have not been coded according to addressee, but many are instructions to his brother, since again they are putting on an impromptu play.) Of the six remaining utterances, three are in French, following Elliot's use of French, and two in Swiss German, following Elliot's use of Swiss German. The other utterance is one which Elliot's brother begins in French but in which he repairs to English after the first word. In the other family recording transcribed, ELL IV FAM, the conversation is mainly between the two boys – and thus the closest data I have to the brothers "alone". The four family members are in bed following a siesta, and the parents are still half-asleep and do not say much. In this conversation, I could discern eleven utterances that the brother directs only to Elliot. Five of these are in English, five in Swiss German, and one is a mixture of both. Finally, on the occasions when the brother makes a brief entrance in the dyadic interactions of Elliot and his caregivers, we hear him addressing Elliot in French in the presence of the babysitter (ELL I BBS), and in Swiss German when Elliot is alone with his father (ELL V FAT).

6.2 Amount of input

In this section, I turn from consistency in the input to the amount of input. In a trilingual family it is very unlikely that a child will have equal input in all three languages over an extended period of time. Among the studies reviewed, this was the case for just two children, Jenny until 2;5 (Barnes 2006), and Daria until 3;4 (Maneva 2004). Among the multilingual families I interviewed, including Lina's and Elliot's, this was never the case. Lina had constant exposure to Swiss German via her mother from birth until the end of the case study. During the same three-year period, her exposure to French and English was frequent but not constant. During one stage, namely during the first half of the case study, she had considerable exposure to French (and English) because her father was at home for six months due to a period of unemployment. However, apart from that time, Lina didn't always see her

father every day, as he sometimes came home late from work, and she was occasionally separated from him for longer periods due to his professional engagements overseas. When her father was absent, Lina thus had no exposure to French, and considerably less exposure to English, as she didn't hear her parents talking to each other – although she still had some English input from her aunt. Her exposure to English via her aunt was approximately biweekly as the aunt lived nearby and visited the family often. In addition, the aunt and the family lived in the same house together for several months when Lina was around one and a half. We can observe, therefore, that Lina's exposure to French and English was neither as constant nor as great as for Swiss German. In terms of regularity, Lina had daily exposure to Swiss German but not to her other two languages. And in terms of proportion, she also had more exposure to Swiss German because she was mostly cared for by her mother. Her two afternoons of playgroup also took place in the local language, Swiss German. With regard to French and English, we can characterise the exposure as roughly "equal least". The regularity and proportion of input can be seen in table 6.8 below.

Table 6.8: Regularity and proportion of language input, Lina

Lina (birth – 3 years)			
Language	Swiss German	French	English
Main source	Mother & Community	Father	Aunt & Parents' talk
Daily exposure	✔	✗	✗
Relative quantity	most	≈ least	≈ least

With regard to Elliot, he was mainly exposed to just his parental languages for his first seven months – his maternal language considerably more than his paternal one, since his mother was at home with him. At seven months, he started French day care three full days a week. His mother looked after him on the other two days. From this moment on, he heard all of his languages frequently and regularly but none of the three every single day. This was because his mother travelled approximately once a month overseas for her work, usually for several days; thus, there were regular periods in which Elliot heard no English. During these absences, Elliot was looked after by his Swiss German-speaking grandmother. His father lived away from home

during the week due to his job in another part of the country, so Elliot did not hear his paternal language on a daily basis either (note, however, that the father did phone his family regularly during the week). Exposure to Swiss German occurred mainly on weekends, holidays and when his grandmother came to stay. Elliot's main source for French was his crèche, and since he attended day care only three days a week he did not hear French every day either. In terms of quantity, Elliot heard his maternal language, English, and the day care language, French, the most and in similar quantities, with slightly more exposure to English. The language he heard least was his father's language. The regularity and proportion of input for Elliot's three languages can be seen in table 6.9, below.

Table 6.9: Regularity and proportion of language input, Elliot

Elliot (7 months – 3 years)			
Language	English	Swiss German	French
Main source	Mother & Parents' talk	Father	Community
Daily exposure	✗	✗	✗
Relative quantity	most	least	almost as much as English

In sum, if we return to Lina, we see that she had a very unequal proportion of input overall, since one language, the maternal and the community language, dominated both in terms of regularity and quantity. Elliot, on the other hand, although he heard his father's language least – and in fact less than Lina heard hers – did not have a single other language which was so dominant in his life. He heard more English and French than Swiss German, but there were also days on which he heard neither. Note that these proportions can be compared to those of the child in Quay (2008): Xiaoxiao heard her mother's and the community language in equal proportions and considerably less of her father's language; this child, it will be recalled, spoke her father's language more with him than any other language.

The evidence thus suggests that the presence or absence of a single dominant language in the child's trilingual input is an important variable with respect to active trilingualism. Lina, who had considerable exposure to Swiss German

compared to her other two languages, mainly spoke Swiss German. Elliot, on the other hand, who had more balanced input, was actively trilingual.

Questions remain, nevertheless. Elliot's large output in Swiss German, the language for which he had the least input, needs further explanation. So does the difference in Lina's production of French compared to English. The regularity and proportion of Lina's input for English was similar to that for French, and in addition she had far less interactive exposure to English, her only interlocutor being her aunt. Thus, further reasons must be sought for her greater production of and greater proficiency in this language compared to French.

6.3 Language constellations

In this section, I examine the effect the language constellations of the families may have on the children's levels of trilingualism. Let us recall the study of Braun and Cline (2010) described in chapter three. They propose a typology of trilingual families in mainly monolingual societies. Those regions of Switzerland in which Lina and Elliot live can be categorised as "mainly monolingual" in the sense that most residents have just one and the same native language. According to Braun and Cline's categorisation, Lina's family falls into their Type II family, in which one or both parents speak two native languages (which may include the community language). Elliot's family falls into their Type I family, in which Parent A and Parent B speak one different native language each, neither of them speaks the community language natively, and they have no common native language. As was described in chapter three, most Type II families did not have actively trilingual children while most Type I families did. Braun and Cline's findings thus correspond to the findings in the present study, in which the Type II family, Lina's, has a child with low levels of active trilingualism, while the Type I family, Elliot's, has a child with high levels of active trilingualism.

We should note here that the fact that Lina's father happened to be a Dutch-French bilingual – bilingualism of at least one parent being a defining characteristic of Type II families – is actually irrelevant, since Dutch played virtually no role in Lina's life. Rather, the presence of the community

language in the home is the salient feature. Parents in Type I families never had the community language as a native language, and most of those families did not use the community language in the home (Braun and Cline 2010: 118, table 5). In Type II families, however, at least one parent usually did speak the community language natively (see pp. 116–7) and most families used it in the home (Braun and Cline 2010: 119, table 6).

The presence or absence of the community language in the home is also one of the two significant input factors in De Houwer's study (2004). It will be recalled that in most families in which the community language was spoken in the home the children were not actively trilingual (p. 126). Thus, according to these two studies, the language constellations favoured Elliot's but disadvantaged Lina's trilingual language acquisition from the start.

6.4 Variety of contacts

The children were in regular contact with speakers of the community languages, above all via day care/play group, but also through exchanges with neighbours, in shops, and so on. With regard to the maternal language, Elliot had regular contact with other speakers of English since many of his parents' friends were (native) speakers of English. Further, Elliot's family lived in a neighbourhood – even a street – in which other English-speaking families lived. For Lina, of course, the maternal language and the community language were one and the same.

Let us now examine the variety of contacts the children had in their paternal languages. Lina's only other source of French was her paternal grandmother, who lived in Belgium. Due to the considerable distance between them, they did not see each other very often. Further, when Lina did visit her grandmother in Belgium, it was in the Dutch-speaking part, and all the other Belgian family members spoke Dutch. In fact, Lina's grandmother herself was also a native speaker of Dutch, not French; it was Lina's paternal grandfather, now deceased, who was the native speaker of French.

Elliot's paternal grandmother, a native speaker of Swiss German, looked after him often. As stated above, she babysat approximately once a month for two

nights in a row, and also regularly had Elliot to stay with her in the German-speaking part of Switzerland, sometimes for up to a week at a time. Elliot's mother pointed out that after one such visit she observed Elliot speaking Swiss German to himself. Then there were also friends of the father who spoke Swiss German, one of whom was Elliot's godfather, a person the child had regular contact with. Elliot's father pointed out that some of his friends were tempted to speak English with Elliot, but that he made a point of asking them to speak Swiss German to his son.

Thus Elliot could observe that other people besides his father spoke Swiss German, and these people were close family members and friends that he saw regularly. Lina, on the other hand, did not observe anyone else speaking her father's language except her far-away grandmother, whom she saw infrequently.

With regard to the third language Lina was exposed to, English, it cannot be said that Lina had a variety of contacts in this language either, although her English did come regularly from two different sources: listening to her parents talking to each other and in interaction with her aunt, while her French came regularly only from one source. However, Lina did not have access to an English-speaking world in the way Elliot did for both of his non-community languages.

Let us return briefly to the trilingual acquisition studies described in chapter three. Recall that the children in Wang (2008) spoke the non-community languages despite the fact that the children did not have regular contact with other speakers of these languages besides their parents. This factor, therefore, was not an essential ingredient in these children's active trilingualism. On the other hand, Dewaele (2007: 71) and Maneva (2004: 114) describe how contact with peers, i.e. other children, very quickly had a positive influence on their own children's production of the home languages. Braun and Cline (2010: 111, 121) also discuss the importance of grandparents and other family members in fostering active trilingualism. We see from the various studies, therefore, that while a variety of contacts is not essential for active trilingualism, it can influence favourably levels of production. Indeed, this is what we can observe

with the two children in the present study. A variety of contacts appears to be one further element in the mix that has led to Elliot's considerable production of his paternal language, the language for which he had the least amount of input. Where Lina is concerned, the converse is true: the lack of a variety of contacts in French and English means that she had reduced motivation to speak other languages besides Swiss German.

6.5 Status of languages

The community language, in general, automatically has status. And even a two-year-old, provided they have some interaction with members of the community, will have some notion of this status. In this section, therefore, I concentrate on the status of the non-community languages involved to see whether this could have influenced the children's acquisition of these languages. The non-community languages for Lina were English and French, for Elliot English and Swiss German. Let us start with English, the non-community language for both families. The status of English as a world language has resulted in it being the language of communication between both sets of parents. This is also a point Barron-Hauwaert (2000: 3) observed in her study, namely that in trilingual family situations, a language with high world status is more likely to be the one chosen as the language of communication between the parents. English is the language Lina's parents spoke together when they first met and which they chose to continue as their couple language. It was the obvious choice as the language of communication for Elliot's parents, since Elliot's mother did not speak Swiss German, and Elliot's father spoke English to a high degree of fluency. The fact that parents speak a particular language together is likely, from the child's perspective, to underline its importance. This importance may have been particularly strong in the case of Lina, since neither parent used this language with her: for Lina, English gained the special status of being the "parents' language". That children might be sensitive to their parents speaking a different language to the ones spoken to them is not surprising. In the other two families that I interviewed in which this was the case (both with English as the lingua franca), and in which the children could already talk, the children were clearly aware of this situation: in one family, the child started producing English of her own accord, while in the other, the child became upset because

he couldn't understand what his parents were saying. It is of note that Lina also occasionally spontaneously spoke English to her parents. In one instance that Lina's aunt recounted to me, Lina's father was gently teasing the child, and her mother admonished him to "leave her". Lina turned to her father and also advised him: "leave her!". And in the recorded data, we find in LIN V AUN, Lina's father offering her aunt a cup of coffee, and Lina clamouring: "coffee please papa".

We see therefore that the high world status of English has caused it to be the language of communication between the two couples in this study, which in turn has resulted in English having a particular status in the home. For Elliot it was the main family language since it was spoken by the mother to the children and by both parents together, and for Lina it had the special status of being the parents' language. A two-year-old can, of course, have no conception of the global status of a language. However, a language having a certain status in the home may be particularly motivating for children to want to speak that language.

Let us now turn to the other non-community language for each child, French for Lina and Swiss German for Elliot. French has high status in Switzerland as a national language, and further, like English, carries "high world status" (Barron-Hauwaert 2000: 3). The prestige of French is also mentioned by Helot (1988: 285) and Wang (2008: 63) as one explanation for the willingness of the children in these studies to speak the language. However, the children in the above-mentioned studies were already of school age. As with English, the global and in this case also national status of French could hardly be grasped by a child as young as Lina. Rather, the one clear result of its status is the parents' decision to raise Lina with French rather than Dutch, her father's other native language. This decision has resulted in at least passive knowledge of French and virtually no knowledge of Dutch. But note that from Lina's own two-year-old perspective, French cannot be seen to carry any particular status. On the contrary, for Lina, French probably carried the status of the "'most' minority language" (Montanari 2010: 121) since Lina did not usually hear adults speaking French to each other.

With regard to Elliot's other non-community language, Swiss German, this has the status within the country of being the language spoken by most Swiss citizens (approximately two-thirds of the population). Elliot's father stated that for career opportunities in Switzerland, it was more important for Elliot to be able to speak Swiss German than French. Although this comment was in response to a question concerning the later schooling of the child, I mention it here since I believe that this conviction was a contributing factor in Elliot's father's efforts in promoting the language. That Swiss German has high status within the country, however, just as with French for Lina, is hardly something that two-year-old Elliot could be aware of. Rather, the status of Swiss German was influential in Elliot's father's desire for his son to acquire the language.

To conclude, I would like to return to the status of English from the children's perspective, and the effect this may have had on the children's trilingual language development. It is difficult to judge the extent to which the status of English as the main family language affected Elliot's willingness to speak it, since it was also the language his mother spoke to him and to which he had a large proportion of exposure. We can observe how it being his home language has likely resulted in the many English lexical mixes which occurred in his speech when in conversation with his father – far more than French ones (see section 5.2.2). Many items referred to are food or household items (e.g. **egg**, **spoon**). Some can be found in the father's own input (**cereals**, **naughty**), while others involve metalinguistic discussion (e.g. mami SAIT **naughty**, 'mummy says naughty'). For Lina, on the other hand, since until now there has not been a single factor which can explain her greater production of and proficiency in English compared to French, the status of English in her microcosm may be of relevance.

6.6 Conclusion

We have seen that the contextual factors described in this chapter can well account for the fact that Lina is highly dominant in Swiss German, and produces considerably less of her other two languages. Swiss German is both the language she hears most at home, as well as the language of the community – it is the dominant language for Lina both inside and outside the home. In comparison, her exposure to both French and English is

considerably smaller and less regular. Further, Lina does not have access to a variety of contacts in the latter two languages.

With regard to Elliot, the factors discussed in the present chapter also explain well his dominance in both French and English. French is the community language, English the main home language, and Elliot has similar proportions of exposure to each. French exposure consists of three full days of day care per week, as well as contacts in the community. English exposure consists of two full days with his mother per week, plus weekends with the whole family in which the couple language is English.

Two important questions remain largely unexplained, however. First, why does Lina produce more, and more complex, English than French? We have just seen that English probably has a certain status in her eyes. However, I contend that this is not enough to account for such great differences in production in her two minority languages. Note that she has less interactive exposure to English than French, and possibly less exposure in general. The second question which remains unanswered is: why does Elliot produce so much Swiss German? After all, during the period of the case study Elliot's father lived away from home five days a week; and while Elliot did have a variety of contacts in Swiss German, especially via his grandmother, these contacts were not of a daily nature. Answers to these two questions will be sought in the following chapter.

7
Contextual Factors II: Discourse Styles

7.0 Introduction

In this final chapter, I analyse the children's levels of trilingualism in relation to the discourse styles of the caregivers. The main part of the chapter is devoted to an analysis of the adults' responses to the children's lexical[50] mixing (sections 7.1–7.3). It will be recalled that mixing here refers to the use of any language other than the one used by the adult (see definitions in 5.2.2). In section 7.1, I define the way in which I work with the parental discourse strategies identified in chapter two. The discussion focuses on slight adaptations of Lanza's model (2004), as well as difficult coding decisions. This is followed by an analysis of the discourse strategies of each caregiver as well as the children's responses to them (sections 7.2 and 7.3). In section 7.4, further elements of the adults' discourse styles, such as teaching techniques and the intensity of the interaction, are examined. Finally, I touch upon the issue of the parent as linguist-investigator in section 7.5. In the last chapter we already established reasons for Lina's dominance in Swiss German and Elliot's dominance in both French and English. The analysis in the present chapter therefore focuses on the two questions posed concerning the children's non-dominant languages, namely: Why does Lina produce more, and more complex, English than French? And, why does Elliot produce so much Swiss German? For this reason, analyses of the conversations between Lina and her father and Lina and her aunt, as well as Elliot and his father, are given prominence.

It should be noted that the analysis in this chapter is per turn, not per utterance, thus the turn totals of the children do not match the utterance figures in tables 5.1–5.18. While a breakdown of the children's speech into utterances in order to quantify language production and to calculate Mean Length of Utterance and Upper Bound scores was appropriate, the utterance was found to be an inappropriate unit for caregiver responses to mixes. An examination of caregiver responses to each mixed utterance was originally

[50] Responses to grammatical mixing were also coded. However, these have been left out of the analyses since the adults clearly did not give grammatical mixes the same weight as lexical mixes. Apart from Lina's aunt, they tended not to correct them.

attempted. However, it was abandoned for the following reason: if a child produced a turn with a number of mixed utterances, the adult did not usually respond to each individual mix, but rather to just one of them, or to the use of the non-context language in that turn in general.

7.1 Responses to mixing: parental discourse strategies revisited

7.1.1 Instruction to translate

An instruction to translate is arguably the most constraining response to a child's use of a non-target language because it is usually unambiguous. The child understands that their language choice has been deemed inappropriate. Example 7.1 illustrates a typical instruction to translate:

Example 7.1	**LIN VI AUN**
*LIN:	HUND.
%eng:	dog
*AUN:	**what does Shelly say?**
%res:	instruction to translate
*LIN:	**dog.**
%phon:	[dɒg̊]

This category is used by Döpke (1992: 66) and Kasuya (1998: 333). It does not exist separately in Lanza's model but rather falls under minimal grasps (see example 38 in Lanza 2004: 267, which is almost identical to 7.1 above).

Also included in the present study as instructions to translate are cases in which the adult prompts a translation by giving the initial phoneme(s) of a word, or the initial word of a multiword expression, as in example 7.2 below.

Example 7.2	**LIN VI AUN**
*AUN:	**what is it?**
*LIN:	(SCH)NÄGG.
%eng:	snail.
*AUN:	**yea:h, and what does Shelly say?**
%res:	instruction to translate
*LIN:	(SCH)NÄGG.

*AUN:	**what? [>] s<n> +…**
%res:	instruction to translate
*LIN:	**[<] <sn>a:il.**
*AUN:	**yea:h. high five. very good.**

While the aunt's **what?** is a minimal grasp, it is immediately followed – and thus overridden – by the prompt **sn**… Note that the aunt only needs to give the first phoneme /s/ before the child starts to translate.

7.1.2 Minimal grasp

As stated above, an instruction to translate is usually unambiguous. For this reason the instruction to translate responses were separated from minimal grasp responses like *what? huh?* or *I don't understand*, which can be ambiguous.[51] With such responses, it is not always clear what the trouble spot is (Lanza 2004: 270). It may lie in the form, the content or even simply the level of loudness of the utterance. If the problem lies in the form, this *may* be the choice of language, but it could also be the child's non-adult-like version of the item in question. This can be observed in example 7.3,[52] where Lina's mother clearly cannot understand the child's first rendering of the French *cassé* ('broken') since Lina pronounces it in a strong Swiss German accent.

Example 7.3	**LIN I MOT**
*LIN:	*cassé*.
%eng:	broken.
%pho:	[ˈkʰɑsɛ] (Swiss German accent)
*MOT:	hä?
%eng:	huh?
%res:	minimal grasp
*LIN:	*cassé*.
%pho:	closer to French pronunciation
*MOT:	JA, KAPUTT.
%eng:	yes, broken.

[51] Lanza herself points out the "plurifunctionality" of such forms (2004: 262).
[52] This example is reproduced more fully as example 7.16 in section 7.2.

7.4 is an example of a minimal grasp in which the child perceives (or chooses to perceive) the trouble spot as being the content:

Example 7.4	**LIN V FAT**
@Situation:	Making objects out of play dough.
*LIN:	*ça* CHÄS, xxx.
%eng:	that cheese, xxx.
*FAT:	*ça c'est quoi?*=
%eng:	what's that?
%res:	minimal grasp
*LIN:	=GÄLL?
%eng:	isn't it?
%com:	tag belongs to Lina's first utterance
*LIN:	KNÄT.
%eng:	play dough.

Here, Lina states that her play dough creation is 'cheese' in the non-target language. Her father queries this with a minimal grasp, and Lina responds by continuing in Swiss German and stating that the material is play dough. She does not respond to the minimal grasp as a cue to change languages.

Minimal grasps may involve a feigned lack of comprehension, as a conscious strategy, as well as a real lack of comprehension, as we saw in example 7.3 (although note that Döpke, 1992: 65, excludes instances of real incomprehension). Both may in fact promote the use of the caregiver language if the child responds to them as a cue to switch languages. However, sometimes it suffices that the child repeat her utterance in the non-target language for the adult to be satisfied. In such cases, minimal grasps cannot be said to promote the use of the adult's language, and thus multilingualism. Therefore, it is very important to take into account the continuation of the exchange in order to see how the minimal grasps are functioning in a particular dyad (see section 7.1.9). While instructions to translate are generally unambiguous, with minimal grasps an examination of the children's responses to them is imperative, since their responses reveal how they are

interpreting the minimal grasps – and thus the extent to which these actually constrain the child to use the adult's language (Lanza 2004: 270).

We should further note that sometimes the same word may or may not be a minimal grasp, depending on the intonation. In example 7.5, Lina's father's use of *quoi?* ('what') with falling intonation indicates that he is trying to work out the referent of Lina's utterance, and not that he has not understood her.

Example 7.5	**LIN I FAT**
@Situation:	Looking at a picture book
*FAT:	*et Juliette, qu'est-ce qu'elle fait?*
%eng:	and Juliette, what's she doing?
*LIN:	DA.
%eng:	there.
*FAT:	*quoi*↓*?*[53]
%eng:	what↓?
%res:	moving on
*LIN:	DA.
*FAT:	*elle se brosse les dents?*
%eng:	she's brushing her teeth?
%res:	moving on
*LIN:	DA.
*FAT:	*oui, elle se brosse les dents, hein?*
%eng:	yes, she's brushing her teeth, huh?
%res:	moving on

The *quoi?* ('what') uttered by Lina's father here was classified as moving on rather than a minimal grasp. While a rising intonation on *quoi* would indicate (feigned) lack of comprehension, the falling intonation of this utterance shows that the father is trying to get the child to explain what she means by DA ('there'). This interpretation is reinforced by the fact that as the conversation continues, we see that the father tries to guess what 'there' could refer to. Note that although this response was coded as moving on, none of the

[53] The falling intonation arrow (Macwhinney 2011: 59) has only been used in order to distinguish between minimal grasps and moving on, therefore I do not list it in the list of transcription conventions in the appendix.

responses to DA were actually counted in the statistics since they all represent responses to grammatical mixes.

7.1.3 Expressed guess

The expressed guess is the third response that I term "constraining", along with instructions to translate and minimal grasps. These responses are constraining because the adult queries the child's utterance and requires them to respond to the query in some way. One point must be noted at this junction, namely that for these responses to be constraining, the child must be given time to reply (cf. Lanza 2004: 271). If this is not the case, the force of the response is greatly reduced, if not eliminated. This can be seen in the following example, in which Lina's aunt responds to Lina's use of Swiss German firstly with an expressed guess, but then immediately asks her a different question.

Example 7.6	**LIN VIII AUN**
*LIN:	ICH SCHRIIBE ÖPPIS.
%eng:	I'm writing something.
*AUN:	**are you gonna write? what are you writing?**
%com:	no pause after expressed guess.
%res:	adult repetition
*LIN:	ÄHM, Ä HÄRZ DRUFF.
%eng:	um, a heart on top.

In this example, Lina was not actually given time to reply to the expressed guess. Therefore, the aunt's response was not coded as an expressed guess but rather as adult repetition (see below), since the aunt repeats at least one lexical item in the target language. The time given to reply was (arbitrarily) set at a minimum length of one second. This procedure also applied to the other two constraining strategies.

7.1.4 Adult repetition

A response in which the caregiver translates at least one lexical item of the child's utterance in their next turn was counted as adult repetition:

Example 7.7 **LIN VIII AUN**

*LIN: NAME SCHRIIBE.

%eng: write name.

*AUN: **yeah you can write, but what colour are the hearts, are they red or blue? hm?**

%res: adult repetition

In addition, clear cases of an adult translating the child's utterance, even in a later turn, were also counted as adult repetition. This can be observed in the following example.

Example 7.8 **LIN VIII FAT**

*LIN: GUMP [/] GUMPISEILI. (1)

%eng: skip [/] skipping rope.

*FAT: *un* GUMPISEILI. (2)

%eng: a skipping rope.

*LIN: JA. (3)

*FAT: *ça ça s'appelle une corde à sauter Lina*. (4)

%eng: that's called a skipping rope Lina.

%res: adult repetition

In this example, Lina firstly names an object ('skipping rope'). Her father code-switches and repeats the name in Swiss German. Lina confirms her father's repetition, thus the two middle utterances, (2) and (3), form an insertion sequence of confirmation. In (4), the father then returns to the child's original utterance to repair the form, providing the word in French. The overriding parental response to the child's mix is clearly that of a translation. For this reason, it was classified as adult repetition rather than code switching, despite the fact that a code-switch indeed occurs in the insertion sequence (see also Lanza 2004: 270).

Of particular interest in a discussion of how caregiver responses to mixing may influence children's multilingual language acquisition was the fact that the data revealed two quite different types of adult repetition, namely one which was marked and indicated to the child that language choice was an

issue, and one which was unmarked, and simply involved the adult incorporating the item in question into their own speech. The first functions as an other-repair, while the second is similar to moving on. These correspond to Döpke's "translation" and "incorporated translation" (1992: 63–4; see also my description in chapter two). I have therefore called these two different types "adult repetition" and "incorporated adult repetition". An example of each is given in 7.9 and 7.10.[54]

Example 7.9	**LIN VI AUN**
*LIN:	CHU:ECHE.
%eng:	cake.
*AUN:	**that's a cake [!].**
%res:	adult repetition
*LIN:	**cake.**

Example 7.10	**LIN IV FAT**
*LIN:	ABZIE.
%eng:	take off.
*FAT:	ABZIE. *oui. <on va enlever la> [/] on va enlever la robe, et on va mettre autre chose. hm?*
%eng:	take off. yes. <we'll take off the> [/] we'll take off the dress, and we'll put on something else. hm?
%res:	incorporated adult repetition
*LIN:	DA.
%eng:	there.

Whenever relevant, the distinction between these two types of adult repetition is taken into account in the analysis. Note that example 7.10 also includes an instance of code switching: a repetition of the child's mix followed by a translation of it. This was already addressed in section 2.2 (example 2.12).

[54] Note that examples 7.6 and 7.7, above, are also instances of incorporated adult repetition, while 7.8 is a marked adult repetition.

7.1.5 Moving on

Although Lanza (2004: 266) shows that this response can be difficult to isolate, in the present data this was rarely the case. The only ambiguity was the occasional case in which the adult continued with the conversation but it was not clear whether they were "exhibiting comprehension of the child's use of a mix" (Lanza 2004: 266) or not. The first case counts as moving on, the second as a non-response. 7.11 is a rare example of an unclear case:

Example 7.11 **LIN VII FAT**

*FAT:	*c'est la tête de l'ours. attends on va faire comme ça. écoute.*
%eng:	it's the head of the bear. wait we'll do it like this. listen.
*LIN:	SO [>] <MACHE>.
%eng:	make like this.
*FAT:	*[<] <l'ours> [/] l'ours te regarde. non d'abord ça. pas ça.*
%eng:	the bear [/] the bear is looking at you. no first that. not that.
%res:	moving on

In this example, it is not actually clear whether the father is reacting to Lina's utterance SO MACHE ('make like this') with his response *non d'abord ça. pas ça.* ('no first that. not that.'). Unclear cases, however, were counted as moving on, on the assumption that in these dyadic adult–child conversations, the adult is generally paying attention to the contributions of the child.

7.1.6 Code switching

Code switching following a child's lexical mix was defined as any switch of the caregiver in his or her next turn, or an obvious repetition of the child's mix in a later turn. As already pointed out above, code switches were only classified as such if they were not overridden by another response. 7.12 is an example of a response classified as code switching:

Example 7.12 **LIN IV FAT**

*LIN:	FERTIG # BADE.
%eng:	finished # bathing.
*FAT:	ah ha. FERTIG BADE. *alors <on va>* [/] *on va y mettre # un pyjama, si on trouve le pyjama.*

%eng: ah ha. finished bathing. so <we'll> [/] we'll put on # pyjamas, if we find the pyjamas.
%res: code switching

7.1.7 No response to mixing

All cases in which an adult did not respond to a child's lexical mix were classified as a non-response. Although these instances were all coded, they are not given in the statistics. A common reason for a non-response was a self-repair on the part of the child. Other reasons included children starting a new topic themselves or walking away. Also included within the non-responses category were the rare cases of an incomprehensible adult reply. Example 7.13 illustrates a non-response due to the child's self-repair:

Example 7.13 **LIN IX AUN**

*LIN: GÄUB.
%eng: yellow.
*AUN: **yeah, but what does Shelly say?**
%res: instruction to translate
*LIN: GRÜN.
%eng: green.
*LIN: GÄUB.
%eng: yellow.
*LIN: **(y)ellow**.
%com: self-repair
***AUN:** **ah: high five, high five.**
%res: no response to mixing

After Lina's first turn in this sequence, her aunt responds with an instruction to translate. Lina continues to name colours in Swiss German in her next turn but within the same turn repairs to English. Thus the aunt has no need to respond to Lina's mix since the child has already self-repaired. And in fact, in the aunt's next turn, she praises Lina's use of English.

7.1.8 Special cases in coding

A particular difficulty in the classification is illustrated by example 7.14. In

this exchange, Lina utters the word for 'chicken' in Swiss German: HUÄN. Her father doesn't understand, and guesses she may have been trying to say the French *encore* ('again', 'more'). From the father's perspective, he has not responded to a mix because he has not interpreted the utterance as a mix. However, from the child's perspective, he has attempted to guess what her utterance could be in the target language, and therefore this has been coded as an expressed guess. The exchange can be seen below.

Example 7.14 LIN II FAT

*LIN:	HUÄN.
%eng:	chicken.
*FAT:	*hein? tu veux encore?* [2 seconds] *encore quoi?*
%eng:	huh? you want more? [2 seconds] more what?
%res:	expressed guess
*LIN:	xxx.

This same method of coding according to the child's perspective was applied consistently.

7.1.9 Children's reactions to the three constraining responses

Besides classifying the adults' responses to the children's lexical mixes, the children's reactions to the adults' three constraining responses were also examined in order to gain a fuller picture of their effectiveness. Nicoladis and Genesee (1998: 87) also follow this path by examining whether there is a correlation between the parental discourse strategies and the child's choice of language in their next turn.

However, applying their exact method to my own data would result in an incorrect analysis in a number of cases, since the child sometimes responds to the strategy in a later turn. This can be seen, for example, in the following extract.

Example 7.15 **LIN 3½ FAT**[55]

*LIN:	**hm cat**. (1)
*FAT:	**no**. (2)
*LIN:	hä? (3)
%eng:	huh?
*FAT:	*non. comment dit papa?* **cat** *c'est quoi* [/-] *ça c'est* Shelly *qui dit* **cat**. (4)
%eng:	no. how does daddy say it? cat it's what [/-] it's Shelly who says cat.
%res:	instruction to translate
*LIN:	meow. (5)
%com:	onomatopoeia
*FAT:	hm? (6)
*LIN:	m(e)ow. (7)
%com:	onomatopoeia, speech indistinct and quiet
*FAT:	*hm? c'est quoi? c'est un +..?* (8)
%eng:	hm? it's what? it's a+..?
*LIN:	*un* +… (9)
*FAT:	*c'est quoi?* (10)
%eng:	it's what?
*LIN:	*un chat*. (11)
%eng:	a cat.

When Lina says **cat** (turn 1), her father firstly denies this, switching to English himself, and simply saying **no** (turn 2). (The switch is probably inadvertent, triggered by Lina's use of English.) This seems to confuse the child, who may not have understood that her choice of language was a problem; she responds with hä? ('huh?') (turn 3). The father expands, invoking the one person, one language principle (turn 4), and asking Lina what her father says for 'cat' (instruction to translate). Lina responds by producing the sound a cat makes (turn 5). Her response is met with questioning hm? (turn 6), and Lina responds again with an onomatopoeic utterance (turn 7), this time produced less distinctly and less confidently. Her father again prompts her to produce

[55] Note that while this example is used for illustration, the response does not appear in the figures since the recording is at age three and a half, outside the main study. Data after the main study are discussed in section 8.3.

the word in French over two more turns (turns 8 and 10), and in the end, Lina finally produces the item in the parental language (turn 11). The entire questioning of Lina's production of **cat** was counted as a single instruction to translate, and the final production of *chat* was counted as a production of the item in question in the parental language. If only the language of the child's following turn had been considered (in this case, Lina's onomatopoeic utterance in turn 5 following the first instruction to translate), as in Nicoladis and Genesee (1998), her actual response to the parent's strategy would have been missed. In the present study, the fact that a child may respond to a constraining response several turns later on is thus accounted for.

Note that Kasuya also looks at children's reactions to parental responses to mixing (see section 2.4) to see whether certain responses influence the child's "next choice of language" (1998: 338). However, there is a difference between "next choice of language" and a child's "language choice in the next conversational turn" (Nicoladis and Genesee 1998: 87). Calculating with the one or the other gives different results. In example 7.15, while Lina's "language choice in the next conversational turn" is an onomatopoeic utterance, her "next choice of language" is French. Nevertheless, I believe that even with "next choice of language" certain responses to strategies will be missed.

7.2 Responses of Lina's caregivers

7.2.1 Responses of Lina's mother

The responses of Lina's mother to her daughter's lexical mixing over the main twelve-month period of the study can be seen in table 7.1, below. Note that reactions to lexical mixes which are family forms are excluded from the table (in this case, two instances of **birdie**). The figures in the table are thus lower by two than all the instances of non-context language utterances in table 5.1.

Table 7.1: Lina's mother's responses following lexical mixing

Trans.	IT	MG	EG	AR	MO	CS	Total
I	0	4	0	5	4	0	13
II	0	0	0	0	0	0	0
III	0	0	0	3	0	0	3
IV	0	0	0	0	0	0	0
V	0	0	0	0	1	0	1
VI	0	0	0	0	0	0	0
VII	0	0	0	0	0	0	0
VIII	0	0	0	0	0	1	1
IX	0	0	0	0	0	0	0
X	1	1	0	0	7	1	10
XI	0	0	0	0	0	2	2
XII	0	2	0	0	0	0	2
Total	1	7	0	8	12	4	32

Key: IT: instruction to translate, MG: minimal grasp, EG: expressed guess, AR: adult repetition, MO: moving on, CS: code switching

At the start of the study, Lina's mother clearly tries to follow the one person, one language family policy and establish a Swiss German-only context. In LIN I–III, the response she uses most following the child's mixes is adult repetition (eight times). This can be seen in the last turn of example 7.16:

Example 7.16 **LIN I MOT**

*MOT:	UI:, JEZ GÖI DIE SCHO KAPUTT! UI.
%eng:	oh:, now they are already broken! oh.
*LIN:	*cassé*.
%eng:	broken.
%phon:	[ˈkʰɑsɛ] (Swiss German accent)
*MOT:	hä?
%eng:	huh?
%res:	minimal grasp
*LIN:	*cassé*.
%eng:	broken.
%phon:	closer to French pronunciation
*MOT:	JA, KAPUTT.
%eng:	yes, broken.

%res: adult repetition

Note that in the above example and throughout, the minimal grasps used by the mother appear to arise from a genuine lack of understanding. Certainly Lina never takes them as a cue to change languages. In the above example, Lina's mother queries her daughter's utterance because she has not understood it; Lina's Swiss German pronunciation of *cassé* impedes her mother's comprehension of the word. When Lina repeats the word in a more target-like pronunciation, her mother understands and is able to translate it for her.

From the fourth to the ninth month of the study, Lina produces virtually no lexical mixes in the data examined (just two in the whole period). With Lina's increasingly obvious dominance in Swiss German, Lina's mother, towards the end of the study, actually prompts her to code-switch, asking her to name objects and colours in her non-maternal languages. Unlike at the beginning of the study, almost all the mixes Lina produces in recordings X and XI are non-spontaneous ones (ten out of twelve). An example of Lina's mother eliciting an English colour term can be seen in example 7.17:

Example 7.17 **LIN XI**

*MOT: UND <WIE SAIT> [/] WIE SAIT SHELLY DA?

%eng: and <what does> [/] what does Shelly call that?

*LIN: **(y)ellow.**

*MOT: **yellow**, JA.

%res: code switching

Following these elicited utterances in recordings X and XI, the mother either moves on with the conversation (seven times) or code-switches herself (three times). Thus we see a change in the mother's approach over the year-long period. At the beginning she strictly follows the one person, one language principle, and tries to socialise her daughter into using just the maternal language with her. By the end of the study, however, Lina's mother is attempting to promote her daughter's two non-dominant languages by

occasionally eliciting words in them and code switching into these languages herself.

7.2.2 Responses of Lina's father

Table 7.2 lists the responses of Lina's father to his daughter's lexical mixing.

Table 7.2: Lina's father's responses following lexical mixing

Trans.	IT	MG	EG	AR	MO	CS	Total
I	0	0	0	4	1	1	6
II	0	3	2	5	1	10	21
III	0	1	0	9	13	0	23
IV	0	3	1	25	21	5	55
V	0	2	1	10	14	19	46
VI	0	2	3	31	21	10	67
VII	0	0	1	13	32	2	48
VIII	0	1	2	16	17	1	37
IX	0	2	4	13	12	5	36
X	0	0	1	10	21	2	34
XI	0	0	1	11	24	1	37
XII	0	1	0	6	16	0	23
Total	0	15	16	153	193	56	433

Key: IT: instruction to translate, MG: minimal grasp, EG: expressed guess, AR: adult repetition, MO: moving on, CS: code switching

The most common response of Lina's father following his daughter's lexical mixing is to move on with the conversation, which he does 193 times out of 433 or 45% of the time. As described in chapter two, this response is close to the bilingual end of the continuum and sends the message to Lina that it is perfectly acceptable for her to use a non-paternal language.

The second most common response is that of adult repetition (153/433 or 35%). In table 7.3 below, I have divided these particular responses into repair-like repetitions and incorporated repetitions.

Table 7.3: Two types of adult repetition used by Lina's father

Transcription	Adult Repetition	Incorporated Adult Repetition	Total
I	2	2	4
II	2	3	5
III	5	4	9
IV	7	18	25
V	1	9	10
VI	18	13	31
VII	6	7	13
VIII	10	6	16
IX	10	3	13
X	0	10	10
XI	4	7	11
XII	4	2	6
Total	69	84	153
%	45	55	100

We can see that over half of the responses involve incorporated adult repetition. The translated term is not marked in any way, and the child is not given the idea that her language choice is an issue. In the following example, we can observe an instance of this type of adult repetition, as well as two code-switches, which will be discussed further on.

Example 7.18 **LIN V FAT**

@Situation: Lina is making a snail out of play dough

*FAT: [...] *il n'a pas de tête ton escargot. tu veux lui donner une tête aussi?*

%eng: [...] it doesn't have a head your snail. do you want to give it a head too?

*LIN: AUG. (1)

%eng: eye.

*FAT: [>] <JA>?

%res: code switching

*LIN: [<] <HIE AUG>. (2)

%eng: here eye.

*FAT: AUG *oui aussi. mais la tête surtout. mhm?*

%eng: eye yes also. but the head above all. mhm?

%res: code switching
*LIN: HIE AUG. (3)
%eng: here eye.
*FAT: *mhm. mais l'escargot <a deux> [/], a deux yeux Lina.*
%eng: mhm. but the snail has two, has two eyes Lina.
%res: incorporated adult repetition

In this example, Lina uses the Swiss German AUG 'eye' three times before her father uses the equivalent French word. The first two times that she uses the word, he responds by code switching himself. After the third time he uses the French equivalent *yeux* 'eyes' but the translation is not marked in any way and Lina is not made to feel that anything in her utterance was amiss. We see that the response is similar to moving on except that the child is exposed to the lexical item in the parental language.

Note that when her father does use adult repetition as a repair, Lina does not always interpret it as such. In the following example, Lina appears to be talking to herself, and asks herself a question in Swiss German. Her father translates her question into French but Lina does not recognise this as a repair (or chooses not to recognise it as such), and simply answers the question.

Example 7.19 LIN VIII FAT
*LIN: WELE FARB WOTSCH LINA?
%eng: what colour do you want Lina?
%com: presumably talking to herself
*FAT: *Lina, quelle couleur tu veux?*
%eng: Lina, what colour do you want?
%res: adult repetition
*LIN: ÄHM # BLAU.
%eng: um # blue.
*LIN: **HIE**.
%eng: here.
*LIN: WELE FARB WOTSCH?
%eng: what colour do you want?
*FAT: *je veux # vert*.

%eng: I want # green.
%res: moving on

We see here an example of Lina's father consciously employing adult repetition as a strategy to try and impose the paternal language. However, the strategy is unsuccessful; Lina does not perceive her language choice to be a problem and simply responds to the question. Lina then repeats her question, now addressing her father, and this time her father does not attempt to translate it but answers it himself (moving on).

The third most common response to Lina's mixing is code switching (56/433 or 13%). This response is the one which most clearly encourages the use of another language, and diminishes any obligation on the part of the child to speak the adult's language: indeed why should she when the adult is willing to speak her language of preference?

With regard to the three constraining responses, we can observe few instances: no instructions to translate, fifteen minimal grasps and sixteen expressed guesses out of a total of 433 responses.

The minimal grasps, as with the mother, often seem to be genuine instances of lack of comprehension. Certainly Lina rarely takes them as a cue to change languages (this occurs just once). Usually she repeats her utterance in the same or in a modified form (twelve times). There is one further instance in which she changes the content but continues in the non-paternal language, and one response which is incomprehensible.

It is imperative to examine how Lina's father reacts to her continued use of Swiss German after his minimal grasps. The exchanges reveal that usually a minimal grasp response on the part of the father is not designed to promote the paternal language but rather, as stated above, an attempt to understand his daughter's utterance. This can be seen in the fact that once Lina has repeated her original utterance her father is often satisfied with her reply. Twice he moves on after such a repetition and five times he actually code

switches himself using the item in question. An example of the latter can be seen in 7.20:

Example 7.20 **LIN IV FAT**

@Situation:	Talking about a doll
*FAT:	[…] *c'est quoi [//] quelle couleur les cheveux?*
%eng:	[…] it's what [/ /] what colour is her hair?
*LIN:	ÄHM # G(R)ÜEN.
%eng:	um # g(r)een.
*FAT:	*comment?*
%eng:	pardon?
%res:	minimal grasp
%com:	father probably has not understood word due to missing /r/
*LIN:	GRÜEN.
%eng:	green.
*FAT:	*non, ça c'est pas* GRÜEN. *c'est marron*. […]
%eng:	no, that's not green. it's brown. [...]
%res:	code switching

In the one instance where Lina does not repeat her utterance, but nevertheless continues in Swiss German, her father also code switches. In sum: Lina continues in Swiss German following thirteen of her father's fifteen minimal grasp responses. In eight of these cases her father is satisfied with the response, and either moves on (twice) or code switches (six times). In interaction with her father, therefore, Lina interprets minimal grasps as a cue to enunciate more clearly and not to change languages. Finally, let us note that in the other five cases of Lina's continuation in Swiss German, her father follows up with an expressed guess (twice) or adult repetition (three times). However, in none of these five cases does Lina produce the item in question in the target language.

Turning to her father's expressed guess responses, we see that these do have the effect of Lina considering whether her father's expression in French is indeed the equivalent of her own. Of the sixteen expressed guesses, Lina responds in the affirmative in Swiss German or with mhm ten times. Her

reactions to the other six expressed guesses are: repeating her original utterance (twice), moving on in the non-target language (twice), not replying (once) and giving a reply which is incomprehensible (once). Note that she never produces her father's language following his expressed guesses.

The recordings of Lina and her father reveal conversations which are what De Houwer has called "dilingual" (see definition in chapter one). Interestingly, Lina seems to have internalised this pattern to such an extent that when her Belgian grandmother comes to visit and speaks French to her, Lina commonly responds in Swiss German – a language her grandmother does not understand.

We see that Lina's father, via his responses to his daughter's use of Swiss German, allows a multilingual context to develop in which his daughter does not feel constrained to use her father's language, French. When his daughter uses Swiss German, the most common response of Lina's father is simply to continue the conversation in French (moving on). Within his next most common response, adult repetition, more than half of his translations are unmarked; the lexical items are simply incorporated in his next turn. Such adult repetitions are thus also similar to moving on. His third most common response, code switching, encourages his daughter's use of Swiss German. What I have termed "constraining responses" are few and, since Lina has generally been given to understand that Swiss German is acceptable, do not usually have a constraining effect. Expressed guesses never lead to a response in French on the part of the child. Questioning of Lina's utterances via minimal grasps usually appears to be genuine since Lina's father is often satisfied with a repetition or clarification in Swiss German. Only once does Lina (choose to) interpret a minimal grasp as a cue to change languages. Finally, Lina's father never responds to a mix with an instruction to translate. Lina, on the other hand, does try to influence her father to speak Swiss German, as can be seen in the extract below. In this conversation, Lina is trying to get her father to remember an incident in Berne but he has no idea of what she is talking about. He misunderstands her use of the Swiss German

word ERINNERE, which Lina is using to mean 'remember', and interprets it instead as 'remind'.[56]

Example 7.21 LIN IV FAT

*LIN:	ERINNERE?
%eng:	remember?
*LIN:	BÄÄN ERINNERE?
%eng:	remember Berne?
*FAT:	*oui. il faut lui rappeler.*
%eng:	yes. we have to remind her [i.e. the mother].
*LIN:	BÄÄN ERINNERE?
*FAT:	ERINNERE?
%com:	imitates child in exaggerated and slightly annoyed tone
*LIN:	JA TU DÜÜTSCH REDE.
%eng:	yes speak German.
%com:	utterance has a smile quality
*FAT:	*non, c'est Lina qui parle le [//] l'allemand. hm?*
%eng:	no, it's Lina who speaks German. hm?

When Lina's father imitates her with his utterance ERINNERE, the child does not notice his annoyed tone of voice but rather his choice of language – which greatly pleases her. We hear a smile quality in her speech as she states 'yes speak German'. Her father doesn't comply, and immediately switches back to French; however he states that it is his daughter who speaks German – thereby underlining the language choice already evident.

Besides the recordings, information on conversational styles was gained from the informal interviews. In one such interview, in the seventh month of the study, Lina's mother expressed disappointment at Lina's lack of production in French. The mother mentioned that Lina's father had, for a short time, tried to insist on her use of French by pretending not to understand (minimal grasp response) but that he had quickly abandoned this because Lina stopped talking (these attempts are not evident in the recordings). Lina's father had explained his abandoning of the strategy with the reasoning that the most

[56] Both these meanings exist for the word.

important thing for him was to be able to communicate with his child. Faced with a breakdown of communication, he chose to allow his daughter to express herself in whatever language she pleased.

7.2.3 Resonses of Lina's aunt

The responses of Lina's aunt to her niece's lexical mixing can be seen in table 7.4 below.

Table 7.4: Lina's aunt's responses following lexical mixing

Trans.	IT	MG	EG	AR	MO	CS	Total
I	0	7	8	8	7	0	30
II	0	1	1	4	0	0	6
III	1	0	1	5	0	0	7
IV	0	3	4	7	2	0	16
V	2	4	3	12	2	0	23
VI	8	4	2	9	3	0	26
VII	5	1	2	10	1	0	19
VIII	3	2	6	13	6	0	30
IX	5	2	4	21	3	0	35
X	6	1	3	13	7	0	30
XI	7	3	2	6	2	0	20
XII	10	0	1	14	7	0	32
Total	47	28	37	122	40	0	274

I discuss the responses here in order from most constraining to least constraining. Instruction to translate is the second most common response of Lina's aunt. The success of this strategy can be seen in Lina's replies. In 32/47 instances, Lina responds by translating the item into the target language. We can observe how internalised this pattern has become in the following example (the aunt frequently uses it for grammatical mixes as well, whose figures do not appear here). In this example, the aunt does not even need to finish her instruction before Lina starts to translate:

Example 7.22 **LIN X AUN**

*LIN: AFF.

%eng: monkey.

*AUN: **what does Shelly [>] <say>?**

*LIN: **[<] <monk>ey.**

These results are interesting in the light of the findings of Kasuya (1998: 337), who separated her two explicit responses (instruction to translate and correction plus elicitation) from the others, and found that children were more likely to use the parental language after an explicit response than any other type of parental response.

Turning to the minimal grasp response, which, in the definition given in 7.1.2, is not explicit and may be ambiguous, Lina responds similarly with her aunt as with her father. That is, she usually repeats her original utterance (19/28 times) or otherwise continues in Swiss German (4 times). Only once does Lina take the minimal grasp response of her aunt as a cue to change languages. A further two responses are incomprehensible and two are not assignable to a particular language. Interestingly, the only time in which Lina takes a minimal grasp response on the part of her aunt as a cue to change to English is following the one French mix in this set of 28. French is a language Lina's aunt does not understand, and it is likely that Lina realises that language choice is the issue here:

Example 7.23 **LIN VI AUN**
@Situation: a fly is buzzing in the room
*AUN: **it's a fly!**
*LIN: **a fly!**
*LIN: **a** *mouche*!
%eng: a fly.
*AUN: huh?
%res: minimal grasp
*LIN: **ah # a fly**.

In terms of promotion of English, it is important to examine how Lina's aunt reacts to the child's continuation in Swiss German after a minimal grasp response. Unlike Lina's father, her aunt frequently keeps insisting on English so that in ten cases out of 28 Lina does finally produce the item in question.

Six of these cases involve a follow-up with adult repetition, four cases an instruction to translate. An example of each can be observed in 7.24 and 7.25.

Unsuccessful minimal grasp response followed by adult repetition:

Example 7.24	**LIN V AUN**
*LIN:	KOMM SITZE.
%eng:	come sit.
*AUN:	huh?
%res:	minimal grasp
*LIN:	SITZE.
*AUN:	**sit.**
%res:	adult repetition
*LIN:	**sit.**

Unsuccessful minimal grasp response followed by instruction to translate:

Example 7.25	**LIN VI AUN**
*AUN:	**wow. what is that?**
*LIN:	BÜSELI.
%eng:	little cat.
*AUN:	**a what [!]?**
*LIN:	BÜSI**.**
%eng:	cat.
*AUN:	**and what does Shelly say?**
*LIN:	**cat.**
*AUN:	**ah. good. cat. the cat # and the hat. slept on a mat.**

The next most constraining response, the expressed guess, is used by Lina's aunt 37/274 times. After two of the responses, Lina immediately switches to English. Seven times she does not respond, two responses are ambiguous, and one is incomprehensible. In most cases (25), however, Lina continues either in Swiss German or with a non-language assignable affirmation (mhm etc). As with the minimal grasp response above, Lina's aunt does not always accept the responses in Swiss German and sometimes keeps insisting on English. In five cases she is successful, so that Lina does eventually produce the item in question. An example is given below:

Example 7.26 **LIN VIII AUN**

*LIN: xxx ICH SCHRIIBE ÖPPIS.
%eng: xxx I'm writing something.
*AUN: **you wanna write something?**
%res: expressed guess
*LIN: JA.
*AUN**:** **so. I:, #I:+...**
*LIN: **I:+...**
*AUN: **wa:nt+...**
*LIN: **wa:nt+...**
*AUN: **to:+...**
*LIN: **to:+...**
*AUN: **[>] <wri:te>+...**
*LIN: **[<] <wri:te>+...**
*AUN: **something.**
*LIN: **something.**

Note that although Lina is repeating most of the words of the sentence one after the other, she does produce the key lexical item **write** at the same time as her aunt, which shows that she does actually know the word.

An examination of Lina's aunt's "follow-ups" after unsuccessful minimal grasp and expressed guess responses shows the importance of looking at an entire conversational sequence, and not just picking out and adding up the individual responses and the children's reactions to them. Simply tallying adult response to mixing + child response would obscure how Lina's aunt insists on the child's use of English.

Adult repetition is the response Lina's aunt uses by far the most following a lexical mix: 44% (122/274) of her responses fall into this category. The most important aspect to note here is that most of these translations, namely 92%, are marked or repair-like (see table 7.5 below). Examples 7.9 and 7.24, above, illustrate Lina's aunt's marked adult repetition. In both examples, we see that Lina repeats the word in question. Examples 7.6 and 7.7, also above, are examples of her incorporated adult repetitions.

Table 7.5: Two types of adult repetition used by Lina's aunt

Transcription	Adult Repetition	Incorporated Adult Repetition	Total
I	8	0	8
II	3	1	4
III	5	0	5
IV	6	1	7
V	11	1	12
VI	9	0	9
VII	10	0	10
VIII	10	3	13
IX	21	0	21
X	11	2	13
XI	6	0	6
XII	12	2	14
Total	112	10	122
%	92	8	100

The most frequent response of Lina's father, moving on, is only the third most frequent response of her aunt. Moreover, an examination of the content of the aunt's turns when she moves on reveals much promotion of English. In the following extract, for example, we see that Lina's aunt does not translate Lina's lexical mix because she wants to teach the child the more appropriate term.

Example 7.27	**LIN X AUN**
@Situation:	looking at a picture book with animals
*AUN:	**what are they doing?**
*LIN:	RIITE.
%eng:	riding.
*AUN:	**they're # galloping.**
%res:	moving on
*LIN:	JA.
*AUN:	**can you say that? galloping.**
*LIN:	**galloping.**
*AUN:	**good.**

In this exchange, I interpret the pause after **they're** as the aunt probably

stopping herself from translating RIITE, 'riding', and looking for the semantically appropriate term **galloping**, which she then gets the child to repeat. In the next example of moving on, we see Lina's aunt ignoring one mix in order to focus on the child's production of a different word.

Example 7.28	**LIN VI AUN**
*AUN:	**what's [>] <this>?**
*LIN:	[<] <LUEG>.
%eng:	look.
*LIN:	**frog.**
*AUN:	**yeah, frog. good.**
%res:	moving on

It appears that in this exchange, the attention-getting utterance LUEG 'look' is for the aunt less important than the names of objects. She does not repair LUEG, but concentrates on praising Lina's next utterance, which is the English noun **frog**.

Finally, we can observe a complete absence of the least constraining response, code switching. The response which is most likely to encourage a multilingual context, and thus detract from the imposition of one particular language, is not used by Lina's aunt at all.

7.3 Responses of Elliot's caregivers

7.3.1 Responses of Elliot's mother

We saw in chapter five that Elliot mixes little when speaking English, thus figures for reactions to such mixes are low. Nevertheless, the results serve as a starting point for a brief look at aspects of the conversational style of Elliot's mother. Note that, as with Lina and her mother, reactions to lexical mixes which are family forms are excluded from the table (in this case four instances of the child using *dodo*, 'sleep', and one instance of *sieste*, 'siesta'). Note further that in ELL IX MOT, the recording in which Elliot's brother is also present, only lexical mixes in turns obviously addressed to the mother could be taken into account, and there were no instances of these.

Table 7.6: Elliot's mother's responses following lexical mixing

Trans.	IT	MG	EG	AR	MO	CS	Total
I	1	0	1	5	1	0	8
II	0	1	1	0	1	0	3
V	0	0	0	2	3	0	5
VI	0	0	0	0	0	0	0
VII	0	0	0	2	2	0	4
VIII	0	0	0	2	0	0	2
IX	0	0	0	0	0	0	0
X	0	1	1	0	1	0	3
XI	0	0	1	0	1	0	2
XII	0	0	0	1	0	0	1
Total	1	2	4	12	9	0	28

Key: IT: instruction to translate, MG: minimal grasp, EG: expressed guess, AR: adult repetition, MO: moving on, CS: code switching

The table reveals that the most common response of Elliot's mother to his lexical mixing is adult repetition, followed by moving on. We can also note a lack of code switching on the part of the mother. Instances of both adult repetition[57] and moving on can be seen in example 7.29:

Example 7.29	**ELL V MOT**
*ELL:	*grenouille*.
*MOT:	**a** *grenouille*, huh. **<that's a f> [//] mummy says frog Elliot. frog, huh?**
%res:	adult repetition
*ELL:	*no:n!*
*ELL:	*grenouille*.
*MOT:	&=laughs
*ELL:	*grenouille*.
*MOT:	**okay.**
%res:	moving on
*ELL:	*grenouille*.
*MOT:	uh huh.
%res:	moving on

[57] This response includes an initial code switch, which is not counted since it is overridden by the adult repetition strategy, as explained in section 7.1.4.

This extract also reveals the flexibility of the parent in adapting to the sensibilities of the child. Elliot's mother begins with a marked adult repetition: **mummy says frog**. However, Elliot, uncharacteristically, refuses the English word, and insists that the animal be called *grenouille*, his voice becoming increasingly deep and insistent with each repetition of the word. His mother, in the face of such determination, does not pursue the matter; instead she laughs and then moves on.

7.3.2 Responses of Elliot's father

The responses of Elliot's father to his son's lexical mixing are shown in table 7.7.

Table 7.7: Elliot's father's responses following lexical mixing

Trans.	IT	MG	EG	AR	MO	CS	Total
I	0	0	0	5	1	0	6
II	0	1	2	11	0	1	15
V	0	1	1	1	1	0	4
VI	0	0	2	7	1	1	11
VII	0	0	1	6	3	1	11
VIII	0	0	0	2	1	0	3
IX	0	0	2	6	2	0	10
X	0	0	1	4	2	0	7
XI	0	1	0	7	6	5	19
XII	0	0	1	2		0	3
Total	0	3	10	51	17	8	89

Key: IT: instruction to translate, MG: minimal grasp, EG: expressed guess, AR: adult repetition, MO: moving on, CS: code switching

As can be seen, by far the most common response of Elliot's father is adult repetition, comprising 51/89 or 57% of all responses. Of these, 67% (34/51) are of the marked type, in which the repetition is used as a repair (see table 7.8 below).

Table 7.8: Two types of adult repetition used by Elliot's father

Transcription	Adult Repetition	Incorporated Adult Repetition	Total
I	0	5	5
II	10	1	11
V	1	0	1
VI	4	3	7
VII	4	2	6
VIII	2	0	2
IX	5	1	6
X	2	2	4
XI	4	3	7
XII	2	0	2
Total	34	17	51
%	67	33	100

The use of this strategy to promote a minority language has been discussed by a number of linguists. Recall that in the first half of the study by Juan-Garau and Pérez-Vidal, the father's most common response, after moving on, was adult repetition (2001: 73, table 3). The authors explain that via the repetition strategy, the father provided the child with vocabulary in the minority language which "he is lacking and without which acquisition can never take place" (p. 78). That such translations appear to be important for fostering the language a child is less exposed to was already discussed by Ronjat (1913). Ronjat describes how German, the maternal language, was the language his son was most exposed to in his early years. Ronjat notes that he always made use of this strategy when the child used German instead of French with him:

> Au 20e mois Louis a encore quelques mots allemands dans une phrase française à moi adressée. Je réponds toujours: "Oui, tu veux dire (ici l'équivalent français)", ou par une formule analogue. (Ronjat 1913: 7)
>
> [At 20 months Louis still has some German words in a French sentence addressed to me. I always reply: "Yes, you mean (here the French equivalent)", or with a similar expression.]

Like the children in the two studies just discussed, Elliot clearly has least exposure to his paternal language. And just like the fathers in these two studies, Elliot's father makes much use of the response which provides his

son with vocabulary in this language: adult repetition, in particular repetition used as a repair. An instance of such a response can be seen in example 7.30, below. Note that the preference for this response was also seen with Lina's aunt but not with Lina's father. Further similarities and differences between these three caregivers are discussed in the following section (7.4).

The next most common response of Elliot's father to his son's mixing, though far less frequent than adult repetition, is moving on, which occurs in 17/89 cases, or 19% of the time. It would appear that in the case of a child's non-dominant language, there needs to be some acceptance of mixing by the adult interlocutor if conversation is to flow. Even Lina's aunt moves on 15% of the time (40/274).[58] Just as we saw with Lina's aunt, however, it is important to examine the context of the responses classified as moving on. Sometimes they occur within a sequence which overall promotes multiligualism, as example 7.30 shows:

Example 7.30	**ELL XI FAT**
*ELL:	**egg**. (1)
*FAT:	**egg**. JA, mami SAIT **egg**, UND papi SAIT AI:. (2)
%eng:	egg. yes, mummy says egg, and daddy says egg.
%res:	adult repetition
*ELL:	AI.
%eng:	egg.
*FAT:	JA, DAS ISCH RICHTIG, DASCH ES AI. GANZ RICHTIG.
%eng:	yes, that's right, that's an egg. completely right.
*ELL:	UND mami SAIT **egg**. (3)
%eng:	and mummy says egg.
*FAT:	JAWOOL, DAS ISCH RICHTIG. SEER SCHÖN. (4)
%eng:	yes, that's right. very nice.
%res:	moving on

In the above example, Elliot uses the English word **egg** with his father (1). His father firstly invokes the one person, one language division: mami SAIT **egg**,

[58] Obviously, this concerns only adult interlocutors who can actually understand the language involved.

UND papi SAIT AI ('mummy says egg, and daddy says egg') (2). When Elliot repeats this 'rule' (3), his father, unsurprisingly, does not correct the mix, but rather praises him (4), this praise being classified as moving on.

The rest of the figures are quite low. We may simply add that for the third most common response, expressed guess, there are six (out of ten) responses on the part of the child which can be assigned to a particular language, and five of these six are in the paternal language. As for code switching (eight cases), most instances of this kind of response are found in a single transcript (XI), and one instance is clearly an example of vocalising the one person, one language division:

Example 7.31 ELL XI FAT

*ELL:	JA, mami SAIT **naughty**.
%eng:	yes, mummy says naughty.
*FAT:	JA, mami SAIT **naughty**, JA.
%res:	code switching

7.3.3 Responses of Elliot's babysitter

For the sake of completeness, I present the figures for the responses of Elliot's babysitter to Elliot's lexical mixing, in table 7.9, below.

Table 7.9: Elliot's babysitter's responses following lexical mixing

Trans.	IT	MG	EG	AR	MO	CS	Total
I	0	0	0	3	2	0	5
II	0	1	1	1	1	0	4
V	0	0	1	2	0	0	3
VI	0	0	2	2	3	0	7
VII	0	0	0	2	1	0	3
VIII	0	0	0	1	1	0	2
IX	0	0	0	0	0	0	0
X	0	0	0	2	3	0	5
XI	0	0	0	0	1	0	1
Total	0	1	4	13	12	0	30

Key: IT: instruction to translate, MG: minimal grasp, EG: expressed guess, AR: adult repetition, MO: moving on, CS: code switching

We see that, as with Elliot's other dominant language, English, there is not much mixing in his French. Further, as pointed out in chapter four, the babysitter is not the main source of French for the child. Thus the babysitter's responses to these mixes are far less important in terms of socialisation compared to those of Elliot's parents. The results are interesting, however, in the sense that we see that adult repetition followed by moving on are the main responses the child receives after producing lexical mixes. This is the same pattern as the responses of Elliot's mother and father. Thus we see that in the home, the child is receiving similar socialisation cues from all three interlocutors.

7.4 Further aspects of the caregivers' discourse styles

In this section, I examine further aspects of the discourse styles of the three caregivers who speak the children's non-dominant languages: Lina's father and aunt, and Elliot's father. The aim of this examination is to throw further light on reasons for the differences between Lina's production of French and English, as well as the large quantity of Swiss German produced by Elliot.

We have seen that Lina's aunt, via her responses to Lina's mixes, tries to constrain Lina to use English to a far greater extent than Lina's father does for French. Besides their different responses to language mixing, various other differences can be observed in Lina's aunt's and father's conversational styles which are likely to contribute to the difference between the child's production of English and French. One is the didactic style of conversation of Lina's aunt compared to her father. Lina's aunt promotes English via various teaching techniques. For example, she asks many choice questions or "or-questions" (Döpke 1992: 150). In the corpus, we find 84 such questions asked by Lina's aunt. 57 of these (68%) result in Lina using English. Example:

Example 7.32 **LIN XI AUN**
*AUN: **do you like dried apple? mhm? is it good or bad?**
*LIN: **good**.

As in the example above, in the majority of these cases (54/57) Lina responds by choosing one of the items in question. In only 13/84 or 15% of the cases

does Lina respond in Swiss German, generally translating the item in question (9/13). The rest of the time (14/84), there is either no response, the response is incomprehensible, or it is ambiguous (all of these responses were categorised as "other"). Table 7.10, below, gives an overview.

Table 7.10: Lina's responses to aunt's choice questions

	Target L used		Non target L used		Other	Total
	chooses one item	*other use of target L*	*translates one item*	*other use of target L*		
I	0	0	0	0	2	2
II	1	0	0	0	0	1
III	4	0	0	0	0	4
IV	7	0	0	1	1	9
V	4	1	3	1	0	9
VI	6	0	1	0	1	8
VII	13	0	1	1	4	19
VIII	7	1	0	0	3	11
IX	1	1	2	1	0	5
X	2	0	1	0	1	4
XI	5	0	1	0	1	7
XII	4	0	0	0	1	5
Sub-total	54	3	9	4	14	84
Total	57		13		14	84
%	68		15		17	100

As discussed in chapter two (section 2.1), choice questions provide the child with (at least) two labels to choose from, and thus foster vocabulary learning. The child is not only provided with the term in the target language but at the same time connected terms are also learnt. Pairs of opposites are presented, e.g. **are you happy or sad?**, as are semantic fields, e.g. **do you want to do the blue or the yellow? or the green? or the pink?** (both examples from LIN VII AUN, the latter counted as a single choice question). An example of Lina's aunt's use of such questions in context can be seen below. Here, the aunt is getting Lina to describe a fly in the room. The extract is a direct continuation of example 7.23 above.

Example 7.33 **LIN VI AUN**

@Situation: a fly is buzzing in the room

*AUN: **it is a fly. is it big [!] or small?**

*LIN: **small.**

*AUN: **small. is it black or white?**

*LIN: **black.**

Lina's father, on the other hand, makes little use of choice questions: nine in the entire corpus. Four of these result in Lina's use of French, three in her continued use of Swiss German, one response is ambiguous, and one is incomprehensible. Thus we see that when Lina's father does ask such questions, his rate of success in getting Lina to use French is higher than her general rate of French use.

Another type of teaching technique which Lina's aunt makes much use of is asking questions which require lexical responses (apart from choice questions). In the transcript of the first recording, all examples of such questions were extracted. In this transcript Lina's aunt asks 25 such questions, and Lina responds in English eleven times. In five cases she provides the expected answer, as in the example below:

Example 7.34 **LIN I AUN**

*AUN: **what's that?**

%com: question requiring lexical response

*LIN: **bird.**

%com: expected response

*AUN: **bird.**

In six further cases she gives a different response, though still in English:

Example 7.35 **LIN I AUN**

*AUN: **what's this?**

%com: question requiring lexical response

*LIN: **this.**

%com: unexpected response in target language

*AUN: **is this a bird?**
*LIN: **bird.**

In the same recording set (LIN I), Lina's father asks just four such questions, one of which results in a response in French (the expected answer).

The same persistence in getting Lina to produce English that we could observe in the examination of responses to mixing (section 7.2.3) can be observed with Lina's aunt's questions. She often persists until the child produces the expected answer. We can see this in her follow-up of the unexpected response in example 7.35, above. When Lina initially fails to produce the word **bird**, and simply repeats the **this** of **what's this?**, Lina's aunt models the word for her next question, **is this a bird?** This modelling results in Lina's production of the word. We can also observe the aunt's persistence when Lina does not immediately respond to choice questions in English. In the example 7.36, when two consecutive choice questions do not meet with the required response, Lina's aunt then switches to an instruction to translate, giving the first phoneme of the word, then trailing off.

Example 7.36 LIN V AUN
*AUN: **is it hot or cold?**
*LIN: HEISS.
%eng: hot.
*AUN: **is it hot or cold?**
*LIN: UH HEISS.
*AUN: h+...
*LIN: **hot.**
*AUN: **good.**

A further difference in the styles of Lina's aunt and father is their level of intensity in interacting. Lina's aunt is an East Coast American who is talkative and gregarious; she has what Tannen (2006: 354) has called a "high-involvement" style. Lina's father, by contrast, is quieter. The aunt plays intensive, sometimes boisterous games, involving running and shouting. Lina's father's activities with his daughter, on the other hand, are usually

calm, e.g. sitting at the table making things out of play dough, playing a board game, or cooking together. Lina's aunt talks animatedly and asks many questions; she thus provides lively input, and demands frequent output. The intensive interaction Lina experiences in English is thus likely to promote her use of English. The style of Lina's father is far less intensive. While he does ask questions, if Lina does not respond he does not usually insist – unlike Lina's aunt. He either moves on or answers the questions himself. The latter can be seen in the following example.

Example 7.37 LIN I FAT

@Situation:	Looking at a picture book
*FAT:	*c'est cuillère. et là?*
%eng:	it's spoon. and there?
%com:	Lina does not respond
*FAT:	*fourchette. et ici, couteau. et là on a une tasse, pour boire le café.*
%eng:	fork. and here, knife. and there we have a cup, to drink coffee.

Lina's father's fairly low-involvement style (Tannen 2006: 354) is well seen in a comparison between his manner of story-telling and that of Elliot's father. In the first recordings both fathers are telling a story based on a picture book. While Elliot's father frequently asks questions about elements of the story, Lina's father tends simply to tell it. In ELL I FAT, there are 43 turns which end in a question. In LIN I FAT, in the same length of time,[59] there are only ten turns which end in a question. We can also observe the different levels of interaction by measuring the length of the fathers' longest turns. Elliot's father's longest turn, before his son contributes, is 34 seconds. Lina's father's longest turn, on the other hand, is two entire minutes.

These different levels of interaction between the two fathers is also reflected in the following measurement: in the 3 hours 54 minutes of speech data transcribed for the dyad Lina–father, Lina's father produces 983 turns. In only 2 hours 45 minutes of speech data transcribed for the dyad Elliot–father,

[59] The recording ELL I FAT is only 13.30 minutes long. Thus for the comparisons of turns ending in questions, and turn length, only the first 13.30 minutes of LIN I FAT were considered.

however, Elliot's father produces 1,664 turns.[60] Overall, therefore, there is a much more interaction between Elliot and his father, their conversations comprising many questions and responses. An example of the question-answer sequences so typical of their exchanges can be seen in 7.38.

Example 7.38 **ELL II FAT**

@Situation:	Looking at a picture book
*FAT:	WAS ISCH DAS?
%eng:	what's that?
*ELL:	LAPME.
%eng:	lamp.
%pho:	metathesis, target: LAMPE
*FAT:	LAMPE.
*ELL:	E LAMPE.
%eng:	a lamp.
*FAT:	BRAVO ELLIOT. BRAVO BRAVO BRAVO. UND DAS ISCH ES BETT. BETT.
%eng:	[...]. and that's a bed. bed.
*ELL:	BETT.
%eng:	bed.
*FAT:	JAWOOL. UH, LUG E MAL DA. WAS ISCH DAS?
%eng:	yes. oh, look there. what's that?
*ELL:	*VELO*.
%eng:	bicycle.
%pho:	[ˈvilə]
*FAT:	ES VELO. JAWOOL. UND DAS DA?
%eng:	a bicycle. yes, and that there?
*ELL:	*VELO*.
%pho:	[ˈvilə]
*FAT:	JA, DASCH ES VELO FÜR DE ELLIOT. HÄ, ES CHLIISES VELO? UND DASCH ES GROOSSES VELO. UND WÄR ISCH DAS DA?
%eng:	yes, that's a bicycle for Elliot. huh, a little bicycle? and that's a big bicycle. and who's that?
*ELL:	MON(D).

[60] Note that these figures refer to language-assignable turns only, taken from the language production tables 6.2 and 6.5 in chapter six.

%eng: moon.
*FAT: DASCH DE MOND. JAWOOL. MOND UND STÄ:RNE. UND DEN HÄMMER NA [/-] DAS ISCH EN KOFFER.
%eng: that's the moon. yes. moon and stars. and then we have also [/-] that's a suitcase.
*ELL: KOFFER.
%eng: suitcase.
%phon. [ˈkɔgaɪ], target: [ˈkɔfər]
*FAT: JA, JEZ GÖMMER DEN GLI ID FERIE, UND DEN TÜEND MER DE KOFFER PAKE. KOFFER.
%eng: yes, we're going on holidays soon, and we'll pack the suitcase. suitcase.
*ELL: KOFFER.
%phon. [ˈgɔfəl], target: [ˈkɔfər]
*FAT: JAWOOL, KOFFER.
%eng: yes, suitcase.
*ELL: BALL.
*FAT: DASCH DE BALL. DASCH EN BALL. JAWOOL. WÄM GHÖRT DE BALL?
%eng: that's the ball. that's a ball. yes. whose ball is it?

Elliot's father's involved and didactic style of interaction can be well seen in this example. He firstly elicits the name of an object (a lamp). When Elliot produces the word in a metathesised version (LAPME instead of LAMPE), his father corrects the pronunciation. After Elliot produces the word correctly, his father showers him with praise, with no less than four instances of BRAVO, and then models the next word for him, BETT ('bed'), which Elliot repeats. With the following object named, *VELO* ('bicycle'), his father reinforces the word by making a number of statements with it ('a bicyle for Elliot', 'a little bicycle', 'a big bicycle'). The next word the father elicits is MOND ('moon'). After Elliot produces the word, his father invokes another word from the same semantic field: STÄRNE ('stars'). With the next object named, KOFFER ('suitcase'), the father expands on the topic, talking about their upcoming holidays, and how they will pack their suitcase. Finally, Elliot spontaneously names an object, a ball, and his father expands on the child's topic, asking

whose ball it is. This kind of didactic style can be observed throughout the recordings between Elliot and his father.

It is interesting to recall that Döpke (1992) suggests that fathers tend to engage in more child-centred activities compared to mothers since they engage in fewer child-caring activities (see section 2.1). In her study, the children received "more intensive exposure to language through the father" compared to more extensive exposure through the mother (2002: 193). In the transcribed conversations in the present study, such a distribution of activities could also be observed. Activities with the mothers include bathing, grooming, dressing, cooking, and household chores. Concerning the fathers, Lina's father engaged in only one such activity in one recording (cooking) and Elliot's father in none. However, while the absence of child-caring and household activities can be observed with both fathers, the descriptor "intensive exposure" does not match for both. Although engaged in similar activities (playing and picture-book reading), their levels of intensity, as has been demonstrated above, are very different. This suggests that it is the parent's personality (also mentioned by Döpke 1992: 191) rather than the type of activity which is significant in the promotion of the minority language.[61] This finding is reinforced when we consider the different interactional styles between Lina's father and aunt. Lina's aunt, like the two fathers, does not undertake any childcare or household activities when with her niece, and devotes all her attention to playing with the child. Yet we could observe very different levels of intensity in the father's and the aunt's interactions.

7.5 Parent is linguist-investigator

In this section I briefly discuss the final contextual factor identified at the end of chapter three, namely the influence of a parent being the linguist-investigator. In these two families, none of the parents were linguists. However, Lina's aunt was at the time studying for a doctorate in linguistics and was also an English teacher at a selective high school in Switzerland. She was not working in the field of bilingual or multilingual language acquisition, and had not heard of Lanza's "parental discourse strategies" or Döpke's

[61] See also discussion of Döpke's findings and speculation concerning this issue in Lanza (2004: 251).

"high constraint strategies" (or similar) at the time the recordings were made. Nevertheless, her "impact belief",[62] her conviction that she could in fact teach Lina English, was no doubt influenced by her background in linguistics.

7.6 Conclusion

After an examination of various contextual factors in chapter six, we were left with the following two questions: Why does Lina produce more, and more complex, English than French? And, why does Elliot produce so much Swiss German? The present chapter has attempted to answer these questions with an analysis of the conversational styles of the caregivers, with a particular focus on those three who speak the children's non-dominant languages: Lina's father, Lina's aunt, and Elliot's father. Table 7.11 shows a comparison of the responses to mixing of these three caregivers. Note that here, adult repetition has been separated into marked adult repetition and incorporated adult repetition.

Table 7.11: Responses of Lina's father, Lina's aunt, Elliot's father

Response	LIN FAT		LIN AUN		ELL FAT	
	N	%	N	%	N	%
IT	0	00.00	47	17.15	0	00.00
MG	15	03.46	28	10.22	3	03.37
EG	16	03.70	37	13.50	10	11.24
AR	69	15.94	112	40.88	34	38.20
IAR	84	19.40	10	03.65	17	19.10
MO	193	44.57	40	14.60	17	19.10
CS	56	12.93	0	00.00	8	08.99
Total	433	100.00	274	100.00	89	100.00

Key: IT: instruction to translate, MG: minimal grasp; EG: expressed guess, AR: adult repetition, IAR: incorporated adult repetition, MO: moving on, CS: code switching

We have seen that in the case of Lina's aunt and Elliot's father, the response most used is that of marked adult repetition, that is, adult repetition functioning as a repair. Lina's aunt makes use of this strategy in 41% of all her responses to Lina's mixing, Elliot's father in 38% of them. In this way, Lina and Elliot are provided with vocabulary in English and Swiss German

[62] De Houwer (2009: 92), see section 2.8 of the present book.

respectively, while at the same time being reminded that they should use this vocabulary. Lina's father, on the other hand, uses this strategy only 16% of the time, his predominant response to Lina's mixing being moving on, which occurs in 45% of all cases.

Figures 7.1–7.3, below, illustrate these findings. The numbers on the vertical axis of the bar charts refer to percentages.

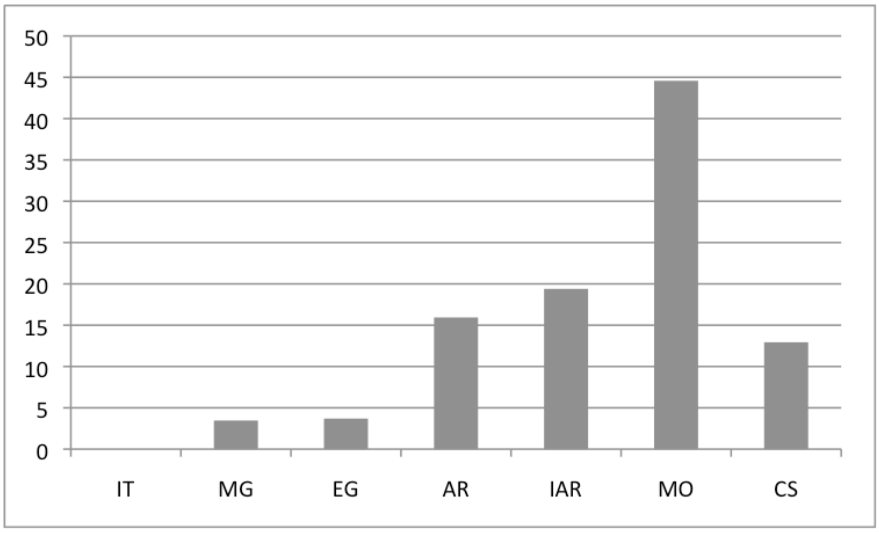

Figure 7.1: Responses of Lina's father to mixing

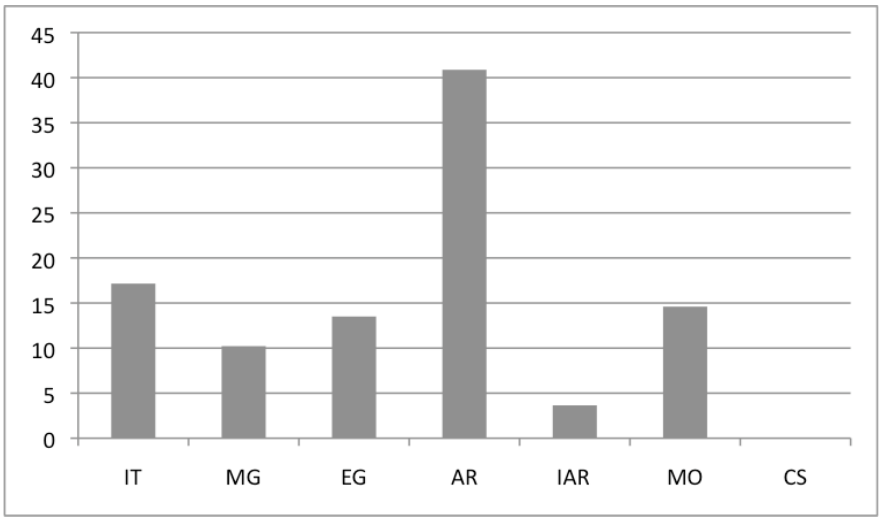

Figure 7.2: Responses of Lina's aunt to mixing

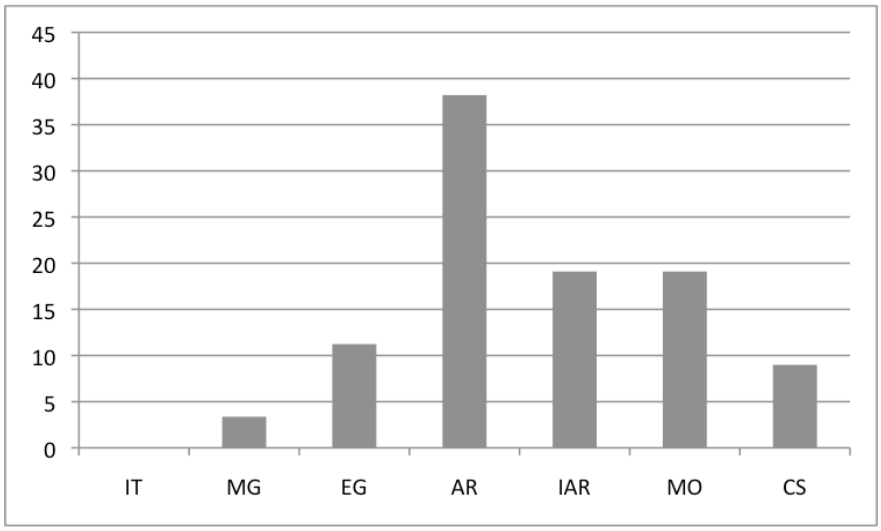

Figure 7.3: Responses of Elliot's father to mixing

These figures illustrate how those responses of Lina's aunt besides adult repetition cluster at the monolingual end of the scale. The three constraining responses, instructions to translate, minimal grasps and expressed guesses comprise 41% of her responses to Lina's mixing. Among the responses of Lina's father, on the other hand, the constraining responses only make up 7%.

We have further seen that both Lina's aunt and Elliot's father have a more interactive and didactic conversational style than Lina's father. They both ask questions which promote vocabulary learning, and expect and demand a certain level of speech output from the child in the language that they are speaking. Lina's father, on the other hand, does not insist on such production of French from his daughter.

That Lina's aunt and father are quite different in terms of how intensely they interact with Lina can partially be ascribed to (culturally-influenced) aspects of their personalities. However, their different levels of insistence must surely also be attributed to their different goals and roles in interaction with Lina. Lina's aunt clearly wants her niece to speak English and takes on a teaching role. As she has stated, she takes pride in the advances of her niece in English. For Lina's father, however, his primary goal is to be able to communicate with his daughter. It seems evident that unhampered communication is more vital for a parent than a relative further removed, since there is more at stake. Lina's aunt can "afford" to risk communication breakdown because their

relationship is not as close as that of a parent and child. Lina's father, on the other hand, does not want to take such a risk. For the same reason, namely the difference in the levels of closeness in the two relationships, Lina's aunt can give priority to her role as a teacher if she so pleases. However for Lina's father, his role as a parent is far more important than that of a language instructor. Thus, in the face of the difficulties described in section 7.2, he abandons his attempts at constraining strategies in favour of fluid conversation with his daughter.

To conclude, let us return to Elliot's father. We see that he, in fact, manages to combine both roles of parent and language teacher comfortably and naturally. His high-involvement and didactic style of interaction can no doubt be attributed to aspects of his personality; however, that Elliot's father is actually able to demand such a high level of output from his son is surely helped by the other contextual factors outlined in chapter six, such as a variety of contacts, in particular the intense contact with his maternal grandmother.

8
In Conclusion

8.0 Introduction

This study has focused on the question of active trilingualism in early childhood. It examined bilingualism studies that offer fruitful approaches to the question of active bilingualism (chapter two), and looked at all trilingual language acquisition studies which provide some information relevant for the enquiry (chapter three). The main part of the study was devoted to an investigation of the language development of two young children growing up exposed to three languages, the social context in which these languages were being acquired and link between the two. The sociolinguistic and pragmatic framework chosen allowed for an in-depth analysis of these children's trilingual language development in context. The approach is a qualitative one, which is at the same time data-driven, since the analyses rely on a large corpus of speech data. Concerning the method, the case study approach is a sagacious one given the complexity of the multilingual setting. Large-scale surveys of course also make important contributions on specific aspects (e.g. De Houwer 2004, on the role of family language constellations). However, only detailed, holistic analyses allow the myriad of contextual factors to be taken into account. In terms of applied linguistics, the findings are of significance for any (potentially) multilingual families, to the extent that parents in such families examine the similarities and differences between their own situations and those of Lina's and Elliot's families.

8.1 Résumé of findings

I have described in detail the circumstances in which one child attained low levels of active trilingualism and another high levels. In black and white terms, we may call Lina a passive trilingual and Elliot an active one. If we recall the findings of De Houwer (2004), we will remember that in her large-scale survey, the majority of children exposed to three languages were not actively trilingual.[63] Lina falls into this majority category, while Elliot falls into the minority category of those children who are actively trilingual.

[63] We must bear in mind that the age groups are different since De Houwer surveyed primary school children.

In what follows, I recapitulate the major findings of the present study, namely the reasons for the trilingual language acquisition paths taken by the two children. First, we saw that all the adults involved followed *the one person, one language strategy*. Most of the caregivers were highly consistent in the use of their native languages with the children. Lina's father, however, was a little less consistent than the others. His greater use of the community language, particularly his incorporation of Lina's Swiss German terms into his own speech, can be considered one element among the various ones which led to Lina's mainly passive knowledge of French. Let us note that high consistency in following the one person, one language strategy only appears to be important for the speakers of the minority languages. Lina's mother, who spoke the majority language, seemed to realize this. Towards the end of the study, when faced with the child's increasingly obvious dominance in Swiss German, her mother began to elicit the names of objects and colours in English and French, also sometimes repeating the words in those languages or supplying Lina with them.

With regard to *amount of input*, it is the balance of input which appears to be vital. Elliot was exposed to less of his paternal language than Lina was, but his overall exposure to his three languages was more even. Recall that Quay's (2008) subject, Xiaoxiao, had productive skills in her paternal language, for which she apparently received only 20% of her total language input. However Xiaoxiao's exposure to her maternal language and to the community language was, as with Elliot, equal. Lina, on the other hand, had an enormous amount of exposure to just one language, which was both the community language and the maternal language. This brings us to the next point, namely the importance of reducing space for the community language. Lina heard Swiss German every day, both in the home and outside it. Elliot did not hear his community language, French, every day, nor did he hear it very often at home.

Elliot's home languages were further supported by a *variety of contacts*. Various people that he interacted with spoke his parents' languages: his parents' friends (both languages), relatives (especially Swiss German) and

some people in the neighbourhood (English). Lina, on the other hand, did not have such access to French- and English-speaking worlds.

We have seen that *languages for which there is considerably less input need to be promoted actively in conversation*. Elliot's father and Lina's aunt did this with their didactic style of conversation. They both made much use of the marked adult repetition strategy following the children's mixes. They focused on teaching the children vocabulary and eliciting this vocabulary from them. It was further seen how effective instructions to translate are. While these were not needed for Elliot, who produced so much of each language, we could clearly see how the use of this strategy affected Lina's production of English. Her aunt often instructed Lina to translate terms with the set phrase "What does Shelly say?" Not only did Lina usually (try to) translate the terms, the strategy also gave her the clear message that English was very much expected of her in conversations with her aunt. This expectation no doubt influenced her production of English in general. Lina produced considerably more English than French, a language for which she had less interactive exposure.

Finally, *the status of the languages involved* was considered. The global and/or national status of languages is not something a very young child would usually be aware of. Thus, it cannot conceivably have any effect on a two year-old's language choice. Such status simply affects whether or how much the child will be exposed to these languages in the first place. Recall Lina's parents' decision to have French rather than Dutch as a home language, and both sets of parents' use of English as their couple language. Recall also Elliot's father's conviction that Swiss German was an important language within Switzerland, which clearly influenced his efforts in promoting it. From the perspective of a young child, it is arguably the community language which has status (everyone outside the home speaks this, especially peers), and, to a lesser extent, the language the parents speak to each other (mummy and daddy speak this language, therefore it must be important). Both children were dominant (Lina) or equally dominant (Elliot) in the community language. The status of English as the couple language seemed to reinforce Lina's willingness to use English (recall Lina using English with her father in

a triadic conversation between the father, the aunt and herself), and cemented English as the main home language for Elliot.

In sum, we have seen that Elliot's high levels of active trilingualism have been fostered by the following: consistency on the part of the minority-language speaking parents, no single language dominating in terms of input, the community language not being spoken in the home, active promotion of the language for which Elliot had the least input (in particular via his father's didactic conversational style) and a variety of contacts in both parental languages. Lina's situation is almost the converse. Her father is the least consistent of the adults in speaking his native language (although quite consistent nevertheless). The input in her three languages is very unbalanced in favour of the community language. Unlike with Elliot, the community language is also a home language, moreover the maternal one. Further, Lina's father does not have a didactic conversational style, and does not insist on Lina speaking French. Finally, Lina does not have a variety of contacts in either of her minority languages. Where Lina's situation is comparable to Elliot's is in the highly didactic and intensive conversational style of Lina's aunt – resulting in the child's greater production of her aunt's language compared to her paternal one.

Two findings from this study are of particular relevance for the field of multilingual language acquisition. One concerns the amount of language input needed for the acquisition of a particular language. We saw that Elliot spoke fluent Swiss German (if less proficiently than his other languages) with his father, most of the time. This high level of production occurred even though his father lived away from home five days a week and Elliot saw his paternal grandmother, his other regular source of Swiss German, on average only about once a month (although then the contact was intensive). This finding corroborates that of Quay (2008, see above), whose subject also had comparatively little exposure to her paternal language – especially when we consider that Elliot produced even more of his paternal language than Xiaoxiao did.

The second finding which deserves underlining is the clear influence of caregiver discourse styles. This can be seen very plainly in Lina's production of English and French. In the case of Lina's two non-dominant languages, all the other variables were virtually the same. The only two differences which existed can be said to cancel each other out: the status of English as the parent's lingua franca in the home – a factor which should promote English – and the smaller amount of interaction which Lina had in English compared to her other languages – a factor which should disadvantage English. Thus, in Lina's situation, with all other variables being the same (or equalled out), we are able to see quite clearly how the differences in the styles of her aunt and father resulted in her speaking considerably more, as well as more proficient, English than French.

8.2 Some avenues for future research

We have seen that trilingual language acquisition studies display a certain amount of diversity with respect to languages and cultures (e.g. Chinese–Japanese–English in Quay 2008 or Tagalog–Spanish–English in Montanari 2005, 2010). Further, with the present contribution there is also representation of a non-standard variety (Swiss German). However, there is little diversity with regard to social class. Virtually all of the studies – as far as this information is given – involve middle-class families in which at least one parent has tertiary education. Studies of trilingualism in families in which parents have lower levels of education and lower-skilled employment would complement the picture concerning contextual factors and multilingual language acquisition.

Further investigation into the different amounts of effort needed to raise multilingual children would also be welcomed. While Wang (2008) shows that it is possible to raise actively trilingual children in the United States, even when the children attend local school, and even when the parents speak English to each other, the amount of effort she and her husband invested in this enterprise would simply be beyond the capacities of most families. On the other hand, the parents in the Swedish-American family described in the introduction of the present study, whose children were active trilinguals, stated that they had made no particular effort to raise their children

trilingually. The American father even mentioned in the interview that he had often spoken Swedish to his first son in the early years "just to see if [he] could". This continued until the child (around age two or three) surpassed him in Swedish skills. In Elliot's family, similarly, no particular effort was needed to foster the maternal language, English, although quite a bit of effort was put into maintaining the paternal language. It thus appears that in certain circumstances no effort is needed and active trilingualism is nevertheless the result, while in others the effort involved is enormous. Data-driven studies of families like the Swedish-American one, in which the children have become active trilinguals seemingly without any particular effort on the part of the parents, would be useful.

Finally, trilingual mixed utterances are of interest. The one example from the corpus is the following: **and** DE UHU *est là* ('and the owl is there'). This utterance was produced by Elliot at age 2;5 in interaction with his French-speaking babysitter. The composition of the utterance is unexceptional: it consists of an English conjunction followed by a Swiss German noun phrase and a French verb phrase; it follows the grammar rules of all three languages. The utterance is only exceptional in its rarity: out of the 8,748 child utterances in the corpus it is the *only* trilingual one. As a comparison, Lina produces 62/3,674 bilingual mixed utterances (2%) and Elliot 136/5,074 (3%).[64] A number of previous studies have also noted the paucity of trilingual mixed utterances compared to bilingual ones (Stavans 1992: 50, Stavans and Swisher 2006: 215, Edwards and Dewaele 2007: 228, Hoffmann and Stavans 2007: 71). The reasons for this, however, are not obvious. Perhaps three codes are not easy for us to manipulate in a single utterance (see also Hoffman and Stavans 2007: 71). Further light should be thrown on this phenomenon as the body of trilingualism studies grows.

8.3 Epilogue

In the penultimate section of this study, I report on how Lina's and Elliot's language development continued. The monthly recordings used for the analyses in this study stopped when the children were just over three years

[64] Figures taken from fullest breakdown of language production displayed in tables in Appendix 4.

old. In addition, there are recordings of Lina in all four contexts (mother; father; aunt; mother + father) at ages 3;6 and 4;0, and recordings of Elliot in two contexts (mother; father) at age 4;0.

Lina's speech production at 3;6 and age 4;0 displayed the same pattern as during the study in the conversations with her mother and aunt. However, in conversation with her father, she used considerably more French than previously. Comparing only utterances entirely in Swiss German, English and French in the transcriptions at age 3;6, we find that Lina's Swiss German utterances in conversation with her mother total 100% (44/44), her English utterances in conversation with her aunt make up 43% (48/112), but her French utterances in conversation with her father total 58% (52/89). Moreover, in the transcription of the recording with her father at age 4;0, this figure rises to 68% (83/122). These proportions are very different from her average of 13% during the study. The reason for this difference can be found in Lina's father having clearly changed his strategy: the two transcriptions reveal entirely didactic sequences involving the learning and practising of vocabulary. Such a sequence could already be observed in LIN XII FAM (see the discussion in section 6.1, just following example 6.6). In these recordings, Lina's father insists that she use French for words she has already acquired in that language, as well as teaching her new words and getting her to repeat them. In the recording at age 4;0, after a quarter of an hour, this teaching session comes to an end and Lina and her father begin to play an imaginative game. Since the change in style is so clear, I decided to also transcribe the next quarter of an hour. Here, Lina produces long turns in Swiss German, for example, describing imaginary horses with coloured manes, which live in a wood. Her father listens to her descriptions, supports her choice of topic (asking questions about the horses) and does not ask her to speak French. In this second fifteen-minute section, Lina produces 5/115 utterances in French or 4%. Thus, we can observe a new strategy on the part of Lina's father. He introduces clearly demarcated teaching sessions in order to try and get his daughter to speak French. The goal in these interactions is unmistakable, namely Lina's acquisition and production of French. Outside of these specific sessions, however, the goal is that which dominates the interactions in the

study, namely smooth and unproblematic communication with his daughter, with a focus on content rather than form.

I also enquired about the children's language development after the start of school. At 5;7 Lina began attending the local kindergarten.[65] In addition, she attended an English language play session with other (mostly Swiss German-speaking) children once a week. Swiss German, obviously, continued to be her dominant language. However, she did not, upon entering the education system, abandon French completely, as one might have predicted. She continued to understand it, and to speak it with her father to a very limited extent. This retention of a small amount of productive French in the face of an even more heavily Swiss German-oriented environment (via new contacts, especially with peers) may have been due to her father's new strategy of engaging in specific language teaching sessions. With regard to English, Lina continued to use a mixture of English and Swiss German with her aunt and was proud of her capabilities in English. She particularly enjoyed the prestige she gained when her aunt addressed her in English in front of her peers.

Concerning Elliot, from the transcriptions of the recordings at age 4;0, we can observe that Elliot continued to speak his parental languages context-appropriately, and with fluency. However, the situation changed for French. At age three, Elliot changed from his French-speaking day care to an English speaking one. His mother reported, "we noticed (what we thought to be) a clear decline in French with this move". She stated that, compared to his previous spontaneity, he had become hesitant in speaking French and lacked vocabulary.

At age 4;3 Elliot began attending an international school, following a stream in which the language of instruction was English, with separate French lessons. His mother stated that his French teacher did not grade him but simply commented, "il participe pas" ('he doesn't participate'). In English, on the other hand, "he was a positive chatterbox" (Elliot's mother). His mother then sent him to a week-long French immersion camp. She reported that after

[65] Starting kindergarten at this age is normal in German-speaking Switzerland, where children begin first grade at the age of seven.

this camp, Elliot suddenly began speaking in French class. Elliot is now, at the time of writing, seven years old and uses all three languages actively. His parents inform me that he is strongest in English, followed by Swiss German, then French.

At this point I would like to make a brief digression into the lives of one of the multilingual families that I interviewed. The children in this family, aged eight and eleven at the time of the interview, had lived most of their lives in German-speaking Switzerland. In their pre-school years, they had also lived for a period of one and a half years in the United States. Their parents followed the one person, one language principle, the mother speaking Italian to the children and the father Swiss German. In addition, the children were exposed to Standard German in the home since it was the couple's lingua franca. However, even though the children lived in German-speaking Switzerland, and the home languages were Italian, Swiss German and Standard German, most of the children's daily life – and above all their social life with their peers – took place in English. This is because they had always attended an English-medium school. The two siblings spoke English to each other and sometimes, as I heard, to their parents. Their mother stated that the family received bemused glances in public when people heard her speaking Italian to the children, her husband Swiss German, and the children responding in English. These children were thus dominant in their school language even though it was neither the language of the community nor of the home.

In the light of the evidence from the family just described, it does not come as a surprise that English became Elliot's single strongest language and French his weakest. It would appear that for children, the language spoken at day care or school is de facto their community language.[66]

8.4 Conclusion

To conclude, this study set out to investigate what factors foster active trilingualism in very young children. We saw that Lina was dominant in

[66] This does not apply to "high" varieties in diglossic situations, such as Standard German in German-speaking Switzerland, since such varieties are not used in ordinary conversation (Ferguson [1959] 2003) .

Swiss German, gained a mainly passive knowledge of French and produced some English, while Elliot spoke all three languages he was exposed to. The analyses conducted in this study showed why this was the case. Further, we have seen with Elliot's language development in the period following the study how quickly things can change with an alteration of input factors.

More generally, we can observe that the attainment of active trilingualism in early childhood is no guarantee for its maintenance in later childhood. The factors identified as being influential for active trilingualism among pre-school-age children – such as the presence or absence of a single dominant language – are surely just as valid for primary school-age children. But with the advent of school, parents generally have less influence over the factors. There is a re-shuffling of the relative amounts of language input with great weight automatically given to the school language, as well as an overall reduction of the parents' realm of influence. The language of the child's peers gains in importance, as does any minority language which has prestige in the eyes of the child's peers – for example, English in the case of Lina, and French for the daughter of Dewaele (interview text) and the children of Wang (2008). While in some families, such as the Swedish-American family described in the introduction, the school language basically provides the third language and poses no threat to the maintenance of the home languages, in other families, the changes schooling brings about commonly make the promotion of active trilingualism (even) more challenging.

Precisely because raising children multilingually can be challenging, a deeper understanding of the contextual factors which influence active trilingualism is imperative. This study hopes to have made a significant contribution towards such an understanding.

Appendix 1: Transcription conventions

(following MacWhinney 2011)

@Situation:	situational information (p. 34)
	Main line (speech line)
*	plus 3 capital letters: speaker (p. 20)
xxx	unintelligible speech (p. 40)
&	precedes a phonological fragment (p. 41)
tex(t)	partial omission of word (p. 42), e.g. **(s)top**
+	joins collocations or compounds which have been counted as one word, e.g. **Mickey+Mouse**. (pp. 44–5)
.	end of unmarked (declarative) utterance (p. 57)
?	end of a question (p. 57)
!	end of an emphatic utterance (p. 57)
,	intra-utterance: slight expected pause between syntactic junctions and enumerations (my definition; see p. 58 for MacWhinney's more general definition)
:	lengthened syllable (p. 58)
&=	prefix for a sound, e.g. **&=grunts** means the speaker grunts
#	intra-utterance pause (p. 60)
+…	trailing off (p. 62)
+..?	trailing off of a question (p. 63)
+/-.	other-interruption (p. 63)
+//.	self-interruption (p. 63)
<text>	for any speech in angle brackets, the accompanying symbol in square brackets applies; e.g. **<text text text> [!]** means that the string of words is stressed. Where no angle brackets are used, the symbols apply to the word immediately preceding the symbol (p. 67).
[!]	previous word (or <longer text>) is stressed (p. 68)
[?]	best guess at a word (or <longer text>) (p. 70)
[>]	overlap follows (p. 71)
[<]	overlap precedes (p. 71)
[/]	retracing without correction (repetition) (p. 72)

[/ /]	retracing with correction (p. 73); in this study, this symbol is also used for retracing involving a change of languages.
[/-]	false start without retracing (p. 73)
[text]	transcriber's comments when they happen to appear in the main speech line
[…]	speech ommitted from the example presented
	Explanatory tiers below main line
%com:	"general purpose comment tier" (p. 79)
%eng:	"fluent, nonmorphemicized English translation" (p. 79)
%lan:	language (p. 81); note that in the examples this tier is usually left out for space reasons and language is indicated via small capitals (Swiss German) italics (French) and bold (English).
%pho:	phonology; speech in IPA (p. 81) or description of pronunciation features
%res:	adult responses to mixing

Appendix 2: Activities in transcriptions

Note that all interactions take place in the children's homes unless otherwise stated.

Lina and mother

I	Mother preparing lunch, Lina playing
II	Baking bread
III	Picture book
IV	Re-arranging furniture for stay of Lina's paternal grandmother
V	Pretend cooking
VI	Getting ready for the day, mostly hairdressing
VII	Eating breakfast
VIII	Eating breakfast
IX	Pretend cooking; toy trains
X	Playing with coloured toy cutlery
XI	Board game
XII	Breakfast; card game
3½	Getting ready for bed
4	Doing handicraft

Lina and father

I	Picture book
II	Making things out of play dough
III	Picture book
IV	Playing with dolls
V	Making things out of play dough
VI	Picture book
VII	Doing a puzzle
VIII	Playing with child's tent, then soft toys
IX	Toys and picture book
X	Cooking spaghetti
XI	Doing a puzzle
XII	Board or card game
3½	Picture book

4a Picture book

4b Fantasy game involving flying horses and pretend skiing

Lina and aunt

I Dominoes; memory; eating a snack

II Pretending to be various animals and objects (aunt's house)

III Dancing, picture book, toy medical kit

IV Picture book; physical game involving spinning

V Pretend cooking; toy medical kit; toy telephone

VI Playing board game; talking about the family's bird

VII Talking about colours of clothes; doing a puzzle

VIII Painting and playing with stamps

IX Toys and picture book

X Playing with toys in play corner of a restaurant

XI Singing, picture books

XII Board game, dancing, singing

3½ Playing ball game; picture book

4 Playing bingo (aunt's house)

Lina and family

II Breakfast, Lina mostly on her rocking horse

XII Toy cutlery; parents discussing a letter

Elliot and mother

I Picture book

II Getting ready for bed; picture book

V Bedtime; picture book

VI Eating lunch

VII In the car, driving to day care

VIII Cutting nails; playing with stickers

IX Putting on a Father Christmas show with brother

X In the bath

XI Gathering toys to take for child's nap

XII Child tells mother about stone he found for her; picture book

4 Making something in the kitchen

Elliot and father

I	Picture book
II	Toy car; picture book
V	Picture book
VI	Playing with coloured cups; picture book
VII	Toy train and other various toys
VIII	Picture book
IX	Pretend cooking for teddy bears
X	Picture book
XI	Picture book
XII	Picture book
4	Playing with toy cowboys

Elliot and babysitter

I	Picture book
II	Picture book
V	Picture book
VI	Picture book; ball game; eating chocolate
VII	Picture book
VIII	Board game
IX	Constructing something
X	Toy car; puzzle
XI	Ball game

Elliot and family

IV	Family in bed, after siesta
XII	Children are putting on a circus for parents

Appendix 3: Length of recordings and transcriptions

Table A3.1: Length of recordings and transcriptions, Lina

	Mother			Father			Aunt			Family		
	Begin	Length Trans.	Length Rec.	Begin	Length Trans.	Length Rec.	Begin	Length Trans.	Length Rec.	Begin	Length Trans.	Length Rec.
I	0:27	15:00	34	0:00	18:39[67]	18	0:15	15:01	34	not tr.	not tr.	17
II	1:03	15:03	31	0:08	16:24	21	0:00	14:03[68]	14	00:25	15:00	23
III	0:21	15:03	27	0:00	15:30	44	0:02	15:00	24	not tr.	not tr.	41
IV	0:44	15:03	61	0:10	16:07	33	12:58	15:01	43	not tr.	not tr.	33
V	0:33	15:06	35	0:14	15:12	43	0:25	15:23	40	not tr.	not tr.	38
VI	0:57	15:02	47	0:10	15:00	13 + 13	0:10	15:00	25	not tr.	not tr.	38
VII	2:09	15:00	36	0:10	15:02	38	0:10	15:00	22	not tr.	not tr.	38
VIII	0:16	15:00	41	0:18	15:14	44	0:22	15:00	33	not tr.	not tr.	44
IX	0:24	15:00	45	0:11	15:03	44	1:00	15:00	42	not tr.	not tr.	45
X	0:27	15:02	40	0:10	15:20	39	0:17	15:00	17	not tr.	not tr.	50
XI	0:26	15:09	49	0:20	15:00	60	3:23	15:07	38	not tr.	not tr.	64
XII	0:22	15:04	48	0:20	15:09	35	1:35	15:20	34	20:15	15:00	35
Age 3½	0:17	15:05	30	0:26	15:50	31	2:00	15:00	34	not tr.	not tr.	46
Age 4a	0:26	15:02	37	0:20	15:01	42	3:18	15:02	40	not tr.	not tr.	49
Age 4b[69]				16.15	15.00	42						
Total		3:30:39			3:53:31			3.29.57			00.30.00	
Total time transcribed						11 hours 24 minutes 07 seconds						

Key: see next page.

[67] This was the first recording to be transcribed and it was transcribed in its entirety. The original, over-ambitious idea was to transcribe all the recordings in full – an idea which was rapidly abandoned. As the child says so very little in this early recording, the entire transcription has been used, rather than cutting off the last three minutes to make it conform to the length of the others.
[68] Four recordings in close succession with lengths of 5.45 + 5.47 + 0.56 + 1.35 = 14.03.
[69] A second section of the recording LIN Age 4 FAT was transcribed for reasons given in section 8.3.

Table A3.2: Length of recordings and transcriptions, Elliot

	Mother			Father			Babysitter			Family		
	Begin	Length Trans.	Length Rec.	Begin	Length Trans.	Length Rec.	Begin	Length Trans.	Length Rec.	Begin	Length Trans.	Length Rec.
I	0:09	9:00	9	0:10	13:30	13	6:20	15:47	19	–	–	–
II	0:15	15:00	18	0:08	15:10	21	0:00	10:33	10	–	–	–
III	–	–	–	not tr.	not tr.	18[70]	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	0:14	12:33	12
V	0:04	15:48	24	0:10	14:33[71]	17	0:00	15:00	19	–	–	–
VI	0:08	15:30	33	0:14	15:24	30	0:16	15:02	32	not tr.	not tr.	27
VII	0:19	15:09	24	0:09	15:11	25	8:43	15:00	27	not tr.	not tr.	24
VIII	0:16	15:05	12 + 12	0:09	15:04	29	0:11	15:00	28	not tr.	not tr.	24
IX	0:20	15:02	34	0:11	15:36	34	0:05	15:00	32	not tr.	not tr.	37
X	0:04	15:00	23	0:18	15:14	44	0:07	15:00	20	not tr.	not tr.	34
XI	0:00	15:11	32	0:14	15:07	31	0:22	15:00	30	not tr.	not tr.	44
XII	1:00	15:00	42	0:17	15:12	30	–	–	–	0:00	15:15	34
Age 4	0:10	15:00	42	0:14	15:06	43	–	–	–	–	–	–
Total		2:40:45			2:45:07			2:11:22			0:27:48	
Total time transcribed						8 hours 5 minutes 2 seconds						

Key:

Begin	Time on recording at which transcription begins in minutes and seconds
Length Trans.	Length of transcription in minutes and seconds
Length Rec.	Length of recording in minutes (non-rounded figures)
Total	Time transcribed in hours, minutes and seconds
–	No recording
not tr.	Recording not transcribed

[70] Four recordings: 9.07 + 4.12 + 0.44 + 3.57.
[71] At 14.43 Elliot's brother and his friend enter the room. From this point on, it is too difficult to work out who is talking.

Appendix 4: Language of children's utterances, all combinations

This appendix contains four tables only, since the language choices of Lina to her aunt, and Elliot to his father contain no further categories than those shown in tables 5.7 and 5.13. The key only explains abbreviations not already explained in section 5.1.

Table A4.1: Language of Lina's utterances with mother, all combinations

Set	E	F	S	EF	ES	FS	EFS	O	ja/yeah	yes	oui	StG	Total
I	0	12	78	0	0	1	0	23	9	0	0	0	123
II	0	0	72	0	0	0	0	11	21	0	0	0	104
III	0	2	61	0	0	1	0	27	5	0	0	0	96
IV	0	0	66	0	0	0	0	8	16	0	0	0	90
V	0	1	69	0	0	0	0	14	11	0	0	0	95
VI	0	0	73	0	0	0	0	12	29	0	0	0	114
VII	0	0	54	0	0	0	0	10	12	0	0	0	76
VIII	0	1	70	0	0	0	0	8	12	0	0	0	91
IX	0	0	73	0	0	0	0	5	9	0	0	0	87
X	4	4	99	0	2	1	0	13	4	0	0	0	127
XI	2	0	72	0	1	0	0	14	2	0	0	0	91
XII	0	0	97	0	0	2	0	4	13	0	0	2	118
Total	6	20	884	0	3	5	0	149	143	0	0	2	1212

Key: StG Standard German

The two instances of Standard German have been added to the figures for "other" in table 5.1 (2 + 149 = 151).

Table A4.2: Language of Lina's utterances with father, all combinations

Set	E	F	S	EF	ES	FS	EFS	O	ja/ yeah	yes	oui	E/S	F + S/E	S + StG	Total
I	0	11	10	0	0	1	0	28	1	0	0	5	0	0	56
II	0	16	32	0	0	1	0	12	10	1	0	1	0	0	73
III	0	13	32	0	1	3	0	8	0	0	0	0	0	0	57
IV	0	8	82	0	0	2	0	31	8	0	0	0	0	0	131
V	1	5	64	0	0	3	0	31	18	0	1	0	0	0	123
VI	0	14	99	0	0	4	0	21	24	0	0	0	1	0	163
VII	0	4	89	0	0	4	0	19	12	0	0	0	0	0	128
VIII	0	8	65	0	0	0	0	11	21	0	0	0	0	0	105
IX	5	9	45	1	1	1	0	14	8	0	0	0	0	0	84
X	0	6	68	0	0	3	0	16	12	0	0	0	1	1	107
XI	0	5	70	0	0	3	0	13	1	0	0	0	0	0	92
XII	0	9	49	0	0	0	0	20	7	0	0	0	0	0	85
Total	6	108	705	1	2	25	0	224	122	1	1	6	2	1	1204

Key:

E/S	English or Swiss German
F + E/S	French plus English or Swiss German
S + StG	Swiss German plus Standard German

The nine instances in the last three language columns have been added to the figures for "other" in table 5.4 (9 + 224 = 233).

Table A4.3: Language of Elliot's utterances with mother, all combinations

Set	E	F	S	EF	ES	FS	EFS	O	ja/ yeah	yes	oui	F/S	E + StG	Total
I	29	8	18	0	2	0	0	27	3	0	0	3	0	90
II	42	18	0	8	1	0	0	69	7	1	0	0	0	146
III	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V	128	16	5	2	1	0	0	61	13	0	0	1	0	227
VI	100	1	2	0	1	0	0	36	3	1	0	0	0	144
VII	132	2	1	3	0	0	0	25	33	0	0	0	0	196
VIII	125	0	2	0	1	0	0	23	6	4	0	0	0	161
IX	–	–	–	–	–	–	–	–	–	–	–	–	–	–
X	111	0	1	0	4	0	0	13	5	12	0	0	0	146
XI	151	0	0	3	5	0	0	21	37	0	0	0	1	218
XII	133	1	0	0	0	0	0	20	3	6	0	0	0	163
Total	951	46	29	16	15	0	0	295	110	24	0	4	1	1491

Key: F/ S French or Swiss German
E + StG English plus Standard German

The five instances in the last two language columns have been added to the figures for "other" in Table 5.10 (5 + 295 = 300).

Table A4.4: Language of Elliot's utterances with babysitter, all combinations

Set	E	F	S	EF	ES	FS	EFS	O	ja/ yeah	yes	oui	E/F +S	F + E/S	E/S	StG	Total
I	2	42	4	0	0	0	0	41	0	0	0	0	1	0	0	90
II	1	71	1	2	0	2	0	15	0	0	2	0	0	0	0	94
III	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IV	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V	0	183	2	0	0	0	1	22	0	0	26	0	0	0	0	234
VI	2	206	0	2	0	0	0	42	1	0	37	3	0	1	0	294
VII	0	165	1	1	0	2	0	41	0	0	6	2	0	0	0	218
VIII	0	80	11	0	0	1	0	66	2	0	10	0	0	1	1	172
IX	3	129	3	2	0	0	0	25	0	0	20	2	0	2	0	186
X	5	175	2	3	0	2	0	57	0	0	21	0	0	2	0	267
XI	0	147	2	1	0	0	0	29	0	0	40	0	1	1	0	220
XII	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total	14	1198	24	11	0	7	1	338	3	0	162	7	2	7	1	1775

Key:

E/F + S	English or French plus Swiss German
F + E/S	French plus English or Swiss German
E/S	English or Swiss German
StG	Standard German

The seventeen instances in the last four language columns have been added to the figures for "other" in table 5.16 (17 + 338 = 355).

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